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Hafner, M.S.

Catalogue

1976 – 1979

#491 – #1028

Calif.
Nevada
New Mexico
Arizona
Texas
Mexico
Utah
Costa Rica

Catalogue

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1 mi. S., 5.4 mi. W Delano, Kern Co., California, 250 ft.

21 February

+ tissue + seed caches + skel. (part.) 491 ♂ *Dipodomys nitratoides* — testes = 12 × 6 mm., scrotal, tub. visib. in caud. epid. — 234 - 140 - 37 - 13 = [no wt.]

+ tissue + seed caches + skel. (part.) 492 ♂ *Dipodomys nitratoides* — testes = 11 × 5 mm., scrotal, tub. visib. in caud. epid. — 238 - 137 - 36 - 13 = [no. wt.]

Tulare-Kern Co. line, 6 mi. W Delano, Kern Co. 250 ft. California

21 February

+ tissue + seed caches + skel. (part.) 493 ♀ *Dipodomys nitratoides* — vag. closed, uterus swollen, corpora lutea = 2 mm., pelvis unnotched — 231 - 126 - 34 - 13 = [no wt.]

Road 88, 3.5 mi. S, 5 mi. W Pixley, Tulare Co., 274 ft., California

21 February

+ tissue + seed caches + skel. (part) 494 ♂ *Dipodomys nitratoides* — testes = 9 × 5 mm., ± scrotal, tub. visib. in caud. epid. — 216 - 130 - 34 - 12 = [no wt.]

5.2 mi. N, 1.5 mi. W Mettler, Kern Co., 300 ft. California

22 February

+ tissue + seed caches + skel. (part) 495 ♂ *Dipodomys nitratoides* — testes = 10 × 5 mm., abdom., tub. visib. in cauda epid. — ears damaged — 240 - 141 - 34 - [12] = [no wt.]

+ tissue + seed caches + skel. (part) 496 ♂ *Dipodomys heermanni* — testes = 14 × 9 mm., scrotal, tub. visib. in caud. epid. — 285 - 170 - 43 - 15 = [no wt.]

Caliente Creek Wash, 8.3 mi. E, 1.4 mi. S Edison, Kern Co. 1,000 ft. California

22 February

+ tissue + seed caches + skel. (part) 497 ♀ *Dipodomys heermanni* — vag. open, uterus swollen, corpora lutea = 2 mm. pelvis unnotched — 270 - 164 - 41 - 14 = [no wt.]

+ tissue + seed caches + skel. (part.) 498 ♂ *Dipodomys heermanni* — testes = 11 × 6 mm., ± scrotal, tub. visib. (faint) in caud. epid. — 262 - 155 - 40 - 15 = [no wt.]

+ tissue + seed caches + skel. (part) 499 ♂ *Dipodomys heermanni* — testes = 11 × 5 mm, ± scrotal, tub. visib. in caud. epid. — 265 - 160 - 43 - 14 = [no wt.]

+ tissue + seed caches + skel. (part) 500 ♂ *Dipodomys heermanni* — testes = 9 × 5 mm., scrotal, — 272 - 165 - 43 - 14 = [no wt.]

5.6 mi. N Sparks, Washoe Co. Nevada.

23 March

+ tissue + skeleton 501 ♂ *Eutamias minimus* — testes = 14 × 6 mm, scrotal, tub. visib., bu gland = 6 × 5 — 195 - 88 - 29 - 16 = 28 gm.

3 mi. E, 7 mi. N Sparks, Washoe Co., Nevada

+ tissue + skeleton 502 ♀ *Eutamias minimus* — vag. plug, emb. 7R-0L = 17 mm. — 200 - 87 - 30 - 16 = 45 gm.

+ tissue + skeleton 503 ♂ *Eutamias minimus* — testes = 14 × 6 mm., scrotal, tub. not visib. in caud. epid. — 194 - 90 - 29 - 16 = 32 gm.

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5.6 mi. N Sparks, Washoe Co., Nevada

23 March

+ tissue + skeleton 504 ♂ *Perognathus parvus* — testes = L=6 R=3 mm, abdom., tub. not visib. in caud. epid. — 178-92-24-8 = 17 gm.

+ tissue + skeleton 505 ♂ *Dipodomys merriami* — testes = 12x6 mm, ± scrotal, tub. visib. in caud. epid. — 244-136-38-13 = 47 gm.

+ tissue + skeleton 506 ♂ *Dipodomys ordii* — testes = 5x3 mm, abdom. tub. not visib. — 242-145-44-14 = 40 gm.

Skull only 507 ? *Canis latrans* — (pick-up)

6 mi. N, 31 mi. W Hiko, 4800 ft., Lincoln Co., Nevada

25 March

+ tissue + skeleton + stomach 508 ♂ *Microdipodops* mega — testes = 5x3 mm., abdom., tub. visib. in caud. epid. — (NE locale) — 140-66-25-10 = 10 gm.

["] 509 ♂ *Microdipodops* pall — testes = 6x4 mm., abdom., tub. visib. in caud. epid. — (NE locale) — 160-90-26-11 = 15 gm.

["] 510 ♂ *Microdipodops* pall — testes = 5x4 mm, abdom., tub. visib. in caud. epid. — (SW locale) — 160-91-26-10 = 13 gm.

["] 511 ♂ *Microdipodops* mega — testes = 6x4 mm, abdom., tub. visib. in caud. epid. — (SW locale) — 148-81-25-10 = 12 gm.

["] 512 ♂ *Microdipodops* mega — testes = 5x4 mm., abdom., tub. visib. in caud. epid — (SW locale) — 158-87-26-11 = 13 gm.

["] 513 ♂ *Microdipodops* pall — testes = — mm, abdom., — (SW locale) — 155-87-25-10 = 11 gm.

["] 514 ♂ *Microdipodops* pall — testes = — mm., abdom. — (SW locale) — 155-86-25-10 = 12 gm.

26 March

+ ectoparasites + tissue + skeleton 515 ♀ *Thomomys bottae* — vag closed, parous — 198-65-27-5 = 92 gm.

6 mi. N, 27 mi. W Hiko, 4800 ft., Lincoln Co., Nevada

26 March

+ tissue + stomach + skeleton 516 ♀ *Microdipodops* p. — vag. closed, emb: 3R [2L reabsorbed] =3mm. — (live captured) — [max. tail dia. = 4.5 mm.] — 153-80-26-10 = 13 gm.

["] 517 ♂ *Microdipodops* p. — testes = 5x4 mm, abdom., tub. visib. in caud. epid. — (" ") — [" " " " = 4.0 mm] — 152-80-26-11 = 14 gm.

["] 518 ♂ *Microdipodops* p. — testes = 5x4 mm, abdom., tub. visib. in caud. epid. — (" ") — [" " " " = 4.0 mm] — 158-88-26-11 = 13 gm.

["] 519 ♂ *Microdipodops* p. — testes = 5x4 mm, abdom. — (" ") — [" " " " = 3.5 mm] — 160-89-26-9 = 14 gm.

~~["] 520 Microdipodops~~

+ tissue + skeleton 520 ♂ *Dipodomys merriami* — testes = 11x6 mm., scrotal, tub. visib. in caud. epid. — 237-142-37-14 = 38 gm.

+ tissue + skeleton 521 ♂ *Dipodomys merriami* — testes = 13x6 mm., ± scrotal, tub. visib. in caud. epid. — 235-138-36-15 = 41 gm.

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Queen City Summit, mi. (by road) NW Hiko, 5960 ft. Lincoln Co., Nevada

26 March

+ tissue
vag. closed, nulliparous
+ skeleton 522 ♀ *Thomomys* 190-66-29-6 = 87 gm.

+ tissue
vag. closed, parous
+ skeleton 523 ♀ *Thomomys* 190-68-27-5 = 75 gm.

6 mi. N, 31 mi. W Hiko, 4800 ft., Lincoln Co., Nevada.

27 March

+ tissue
+ stomach
testes = 5 x 4 mm., abdom., tub. visib. in caud. epid. [max. tail dia. = 4.0 mm]
SKELETON ONLY 524 ♂ *Microdipodops* 160-91-26-11 = 13 gm.

[" "]
testes = 6 x 4 mm., abdom., tub. visib. in caud. epid. [" " " = 3.5 mm]
skeleton only 525 ♂ *Microdipodops* 164-91-26-10 = 13 gm.

[" "]
testes = 7 x 5 mm, abdom., tub. visib. in caud. epid. [" " " = 4.5 mm]
skeleton only 526 ♂ *Microdipodops* 156-85-26-10 = 13 gm.

[" "]
testes = 5 x 4 mm, abdom. tub. visib. in caud. epid. [" " " = 3.5 mm]
Skeleton only 527 ♂ *Microdipodops* 157-85-26-10 = 12 gm.

[" "]
testes = 5 x 4 mm, abdom., tub. visib. in caud. epid. [" " " = 3.0 mm]
Skeleton only 528 ♂ *Microdipodops* 155-81-24-10 = 12 gm.

+ tissue
testes = 4 x 3 mm., abdom.
Skeleton only 529 ♂ *Perognathus longimembris* 128-70-19-7 = 6 gm.

+ tissue
testes = 12 x 6 mm, scrotal, tub. visib. in caud. epid.
skeleton only 530 ♂ *Dipodomys microps* 272-158-44-14 = 64 gm.

+ tissue
vag. swollen, plugged, lactating, uterus swollen: filled with residue
Skeleton only 531 ♀ *Dipodomys microps* 260-149-41-13 = 50 gm.

+ tissue
testes = 11 x 6 mm., scrotal, tub. visib. in caud. epid.
Skeleton only 532 ♂ *Dipodomys microps* 280-165-44-14 = 67 gm.

+ tissue
vag. closed, emb. (reabsorb.) = 2R-1L
skeleton only 533 ♀ *Dipodomys microps* 255-145-41-14 = 53 gm.

+ tissue
vag. closed, uterus swollen, vascularized.
Skeleton only 534 ♀ *Thomomys* 208-71-26-6 = 73 gm.

+ tissue
testes = 20 x 14 mm, scrotal, tub. visib. in caud. epid.
Skeleton only 535 ♂ *Thomomys* 215-73-29-6 = 100 gm.

+ tissue
testes = 15 x 7 mm, scrotal?, tub. visib. in caud. epid.
Skeleton only 536 ♂ *Onychomys* 122-40-20-15 = [no wt.]

10 mi. E, 15 mi. N Warm Springs, 6000 ft., Nye Co., Nevada.

28 March

~~+ tissue~~
testes = 5 x 3 mm, abdom. SV = 9 mm.
skeleton only 537 ♂ *Perognathus longimembris* 89-[30]-19-6 = [no wt.]

+ tissue
testes = 10 x 6 mm, ~~scrotal~~, tub. visib. in caud. epid.
skeleton only 538 ♂ *Dipodomys ordii* 245-135-41-13 = [" "]

+ tissue
vag. closed, scars: 3R-4L
Skeleton only 539 ♀ *Peromyscus maniculatus* 158-65-20-19 = [" "]

+ tissue
vag. closed, parous, no emb., no scars.
Skeleton only 540 ♀ *Peromyscus maniculatus* 156-63-20-19 = [" "]

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10 mi. E, 15 mi. N Warm Springs, 6000 ft., Nye Co., Nevada.

28 March (con't)

testes = 9 x 5 mm, scrotal ?, tub. visib. in caud. epid.
+ tissue skeleton only 541 ♂ *Peromyscus maniculatus* 147-69-20-17 = [no wt.]
testes = 10 x 5 mm, ± abdom., tub. visib. in caud. epid.
[" " "] 542 ♂ *Peromyscus maniculatus* 141-62-21-18 = [no wt.]
testes = 9 x 5 mm, ± abdom., tub. visib. in caud. epid.
[" " "] 543 ♂ *Peromyscus maniculatus* 153-63-21-18 = [" "]

Carrizo Plain, 3.8 mi. S, 11.5 mi. W Taft (Kern Co), San Luis Obispo Co., California 2200 ft. 17 April

testes = 11 x 6 mm, scrotal, SV = 20 mm, tub. visib.
+ skeleton 544 ♂ *Dipodomys nitratoides* 238-145-37-13 = 43 gm
vag. closed, emb. 2R-2L = 5 mm.
+ skeleton only 545 ♀ *Dipodomys heermanni* 285-169-42-18 = 68 gm

Carrizo Plain, 7.5 mi. E, 2.5 mi. S. Simmler, San Luis Obispo Co., California, 2400 ft.

17 April

testes = 7 mm, scrotal, tub. visib.
+ skeleton 546 ♂ *Perognathus californicus* 167-91-24-12 = 16 gm.
imm. testes = 5 mm, abdom.
+ skeleton 547 ♂ *Ammospermophilus nelsoni* 180-58-35-12 = 61 gm.
imm. vag. closed, null.
+ skeleton 548 ♀ *Ammospermophilus nelsoni* 177-60-~~37~~ 35-12 = 56 gm.
vag. closed, scars 4R-1L — lactating; nipples 7R-6L (2nd pectoral nipple on left side missing)
+ skeleton 549 ♀ *Ammospermophilus nelsoni* 222-75-40-14 = 140 gm.

1.0 mi. W Lost Hills, Kern Co., California, 350 ft.

10 April

testes = 12 mm., scrotal, tub. visib. in caud. epid.
[seed cache] 7 + tissue + skull Alc. 550 ♂ *Dipodomys nitratoides* 227-137-35-13 = [no wt.]
vag. closed; emb. = 2R-1L = 6 mm.
[seed cache] 8 + tissue + skull Alc. 551 ♀ *Dipodomys nitratoides* 215-128-35-13 = [no wt.]

6.2 mi. E, 2.5 mi. N Lost Hills, Kern Co., California, 200 ft.

10 April

testes = 10 mm, scrotal, tub. visib. in caud. epid.
seed cache 13 + tissue + skull Alc. 552 ♂ *Dipodomys nitratoides* 233-147-36-14 = [no wt.]
vag. closed, reabsorbed emb: 1L-1R
seed cache 14 + tissue + skull Alc. 553 ♀ *Dipodomys nitratoides* 232-137-36-14 = [no wt.]
vag. closed, reabsorbed emb: 1L-1R
seed cache 15 + skull + tissue Alc. 554 ♀ *Dipodomys nitratoides* 230-144-36-15 = [no wt.]

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5.3 mi. E, 7 mi. N Lost Hills, Kern Co., California, 200 ft.

10 April

seed cache 16 + tissue + skull vag. closed. emb: 2R-1L = 4 mm.
Alc. 555 ♀ Dipodomys nitratoides 210-122-33-12 = [no wt.]

1.5 mi. E, 3 mi. N Taft, Kern Co., California, 600 ft.

11 April

seed cache 25 + tissue + skull testes = 11 mm, scrotal, tub. visib. in caud. epid.
Alc. 556 ♂ Dipodomys nitratoides 236-152-35-14 = [no wt.]

seed cache 26 + tissue + skull vag. plug: emb: 1L-1R = 3 mm.
Alc. 557 ♀ Dipodomys nitratoides 215-135-33-13 = [no wt.]

1.5 mi. E, 1.2 mi. S Tupman, Kern Co., California, 400 ft.

11 April

seed cache 22 + tissue + skull vag. closed, recent implantation: 1L-1R
Alc. 558 ♀ Dipodomys nitratoides 222-[127]-35-14 = [no wt.]

seed cache 24 + tissue + skull vag. open, reabsorbed emb: 1R-1L
Alc. 559 ♀ Dipodomys nitratoides 224-132-36-14 = [no wt.]

seed cache 23
560 Dipodomys heermanni

7 mi. W Old River, Kern Co., California, 300 ft.

11 April

seed cache 27 + tissue + skull vag. open, emb: 1R-1L (being reabsorbed)
Alc. 561 ♀ Dipodomys nitratoides 132-[43]-35-13 = [no wt.]

seed cache 28 + tissue + skull vag. closed, emb: 1R-2L = 4 mm.
Alc. 562 ♀ Dipodomys nitratoides 215-120-33-12 = [no wt.]

seed cache 29 + tissue + skull testes = 10 mm, scrotal, tub. visib. in caud. epid.
Alc. 563 ♂ Dipodomys nitratoides 227-135-33-14 = [no wt.]

seed cache 30 + tissue ~~+ skull~~ vag. open, nipple wear, recent scars: 2R-1L
Alc. 564 ♀ Dipodomys heermanni 267-156-41-16 = [no wt.]

seed cache 31 + tissue ~~+ skull~~ testes = 13 mm, scrotal, tub. visib. in caud. epid.
Alc. 565 ♂ Dipodomys heermanni 303-185-44-18 = [no wt.]

seed cache 32 + tissue ~~+ skull~~ testes = 15 mm, scrotal, tub. visib. in caud. epid.
Alc. 566 ♂ Dipodomys heermanni 293-175-41-16 = [no wt.]

seed cache 33 + tissue ~~+ skull~~ testes = 12 mm, scrotal, tub. visib. in caud. epid.
Alc. 567 ♂ Dipodomys heermanni 284-170-42-16 = [no wt.]

seed cache 34 + tissue ~~+ skull~~ testes = 11 mm, ± scrotal, decending ?, tub. visib.
Alc. 568 ♂ Dipodomys heermanni 285-165-41-18 = [no wt.]

seed cache 35 + tissue ~~+ skull~~ testes = 11 mm, ± scrotal, tub. visib. in caud epid.
Alc. 569 ♂ Dipodomys heermanni 290-177-42-17 = [no wt.]

seed cache 36 + tissue vag. closed, ~~emb~~: 2R-2L = 3 mm, recent scars 1R-2L - nipple wear
Alc. 570 ♀ Dipodomys heermanni 280-168-42-16 = [no wt.]

+ tissue testes = 9 mm, ~~scrotal~~ abdom. (decending)
Alc. 571 ♂ Ammospermophilus nelsoni 228-70-40-12 = 140 gm

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3.8 mi. W Buttonwillow, Kern Co., California, 300 ft.

11 April

seed cache 21 + tissue + skull Alc. 572 ♂ Dipodomys nitratoides — testes = 11 mm, ± scrotal, tub. visib. in caud. epid. — 220-132-33-13 = [no wt.]

+ tissue Alc. 573 ♂ Dipodomys heermanni — testes = 12 mm, scrotal, tub. visib. in caud epid. — 298-177-42-17 = [no wt.]

4.6 mi. E Buttonwillow, Kern Co., California, 250 ft.

11 April

seed cache 19 + tissue + skull Alc. 574 ♂ Dipodomys nitratoides — testes = 11 mm, scrotal, tub. visib. in caud.-epid. — 224-[115]-35-13 = [no wt.]

seed cache 20 + tissue + skull Alc. 575 ♂ Dipodomys nitratoides — testes = 9 mm, scrotal, tub. visib. in caud. epid. — 228-133-35-13 = [no wt.]

Carrizo Plain, 3.8 mi. S, 11.5 mi. W Taft (Kern Co.), San Luis Obispo Co., California 2200 ft.

17 April

+ tissue + skull Alc. 576 ♀ Dipodomys nitratoides — vag. open, swollen, recent scars: 1R-1L (2 young born in captivity) 1 week before — 215-[115]-36-11 = [no wt.]

+ tissue Alc. 577 ♀ Onychomys torridus — vag. closed, ~~scars~~: 2R-1L = 22 mm. — 137-49-21-17 = 26 gm.

skeleton only ~~Alc.~~ 578 ♂ Dipodomys heermanni — testes = 11 mm, scrotal, tub. visib. in caud.-epid. — 300-175-45-18 = [no wt.]

Carrizo Plain, 7.5 mi E, 2.5 mi. S. Simmler, San Luis Obispo Co., California, 2400 ft.

17 April

skeleton only 579 ♀ Dipodomys heermanni — vag. closed; emb: 3R-2L = 17 mm. — 308-190-47-18 = [no wt.]

seed cache 37 + blood + tissue + skeleton 580 ♀ Perognathus californicus — vag. closed, nulliparous — 188-100-26-12 = [no wt.]

seed cache 38 + blood + tissue + skeleton 581 ♂ Perognathus californicus — testes = 8 mm, scrotal, tub. visib. in caud. epid. — 201-111-25-13 = [no wt.]

1 mi. S. of Kingman's Hilltop Area, Mohave Co., 3300 ft. Arizona

30 June

skeleton only + blood + tissue 582 ♂ Perognathus amplus — juv. testes = 3 mm, abdom. — coll. by J.T. Mascarello — 162-86-21-7 = no. wt.

skeleton only + blood + tissue 583 ♀ Perognathus amplus — juv. vag. closed, nulliparous — coll. by J.T. Mascarello — 168-91-21-7 = no. wt.

skeleton only + blood + tissue 584 ♀ Perognathus amplus — juv., vag. closed, nulliparous — coll. by J.T. Mascarello — 148-79-20-7 = no wt.

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1 mi. S of Kingman's Hilltop Area, Mohave Co.,
3,300 ft., Arizona

30 June

skeleton only +blood tissue
585 ♀ Perognathus amplus — juv., vag. closed, null. — (coll. by J.T. Mascorello) 147-76-20-7 = no wt.

skeleton only +blood tissue
586 ♂ Perognathus amplus — juv. testes = 3 mm. abdom. — (" " " ") 165-83-21-7 = no wt.

skeleton only +blood tissue
587 ♀ Perognathus amplus — juv. vag. closed, null. — (" " " ") 167-89-21-7 = no wt.

skeleton only +blood tissue
588 ♀ Perognathus amplus — juv. vag. closed, null. — (" " " ") 164-87-22-7 = no wt.

skeleton only +blood tissue
589 ♂ Perognathus amplus — juv. testes = 4 mm. abdom. — (" " " ") 153-82-21-7 = no wt.

skeleton only +blood tissue
590 ♂ Perognathus amplus — juv. testes = 4 mm. abdom. — (" " " ") 164-84-21-7 = no wt.

skeleton only +blood tissue
591 ♀ Perognathus amplus — juv. vag. closed, null. — (" " " ") 153-83-21-7 = no wt.

2.7 mi. N, 6.5 mi. W Capitan, 6800 ft. Lincoln Co.,
New Mexico.

5 August

skull only + tissue
592 ♂ Sylvilagus auduboni — testes = 20 mm., abdom. (bot-fly larva under leg) — gm 350-54-92-69 = 690

0.5 mi. NE Mescalero, 6600 ft., Otero Co.,
New Mexico

6 August

skull only + tissue
593 ♂ Thomomys bottae — testes = 4 mm., abdom. — 225-65-32-7 = 135 g.

2.7 mi. N, 6.5 mi. W Capitan, 6800 ft., Lincoln Co.,
New Mexico.

skull only + tissue
594 ♀ Sylvilagus auduboni — vag. open, developing embryos (~10 mm) 2R-1L — 415-75-100-70 = 1100 gm

6.6 mi. S, 0.5 mi. W Ruidoso, ~~6000~~ 7600 ft., Otero Co.,
New Mexico.

5 August

+chrom. +blood +tissue
595 ♀ Thomomys bottae — vag. open: emb. = 2R-2L ≈ 4 mm. — ruidoso — 215-61-27-6 = 97 gm

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2.7 mi. N, 6.5 mi. W Capitan, 6800 ft, Lincoln Co., New Mexico.

6 August

+chrom. +tissue +blood 596 ♀ Thomomys bottae actuosus — vag. open, swollen, scars; 2R-1L, nipple wear — 223-70-29-6=93g.

1.3 mi. S, 2.8 mi. E Ruidoso, 6600 ft., Lincoln Co., New Mexico.

8 August

+chrom. +tissue +blood 597 ♀ Thomomys bottae ruidosae — vag. closed; emb; 2R-2L=8mm. — 219-61-28-6=95g.

5.5 mi. S, 4.5 mi E Capitan, 6700 ft., Lincoln Co., New Mexico.

8 August

+chrom. +tissue +blood 598 ♀ Thomomys bottae actuosus — vag. closed; emb; 2L=3mm. recent nipple wear — 209-61-26-6=86g.

2.8 mi. S., 2 mi. W Nogal, Lincoln Co., 7300 ft., New Mexico

11 August

+blood, tissue +karyotype (=chrom.) 599 ♀ Thomomys bottae ruidosae — vag. closed, parous, no emb. no scars — (site #2) 198-58-28-6=82 gms.

+blood, tissue +chrom. 600 ♂ Thomomys bottae " — testes=5mm., abdom. — (site #3) 193-59-28-5=70 gms.

+blood, tissue +chrom. 601 ♂ Thomomys bottae " — testes=5mm., abdom. — (site #4) 230-77-29-6=85 gms.

+blood, tissue +chrom. +baculum 602 ♂ Thomomys bottae " — testes=8mm., abdom. — (site #5) 212-70-28-6=91 gms.

2.4 mi. S, 0.8 mi. W Nogal, Lincoln Co., 6900 ft. N. Mexico

12 August

+blood, tissue +chrom. 603 ♀ Thomomys bottae - actuosus? — vag. closed, uterus swollen, parous — (site #1) 220-66-28-6=105 gms.

+blood, tissue +chrom. 604 ♀ Thomomys bottae actuosus? — vag. open, emb. 2R-2L=2mm. — (site #2) 208-68-28-6=97 gms.

2 mi. S Nogal Lincoln Co. 6800 ft., New Mexico. (12 Aug)

+blood, tissue +chrom. +ectoparasites. 605 ♀ Thomomys bottae actuosus? — vag. closed, uterus slightly swollen, nulliparous — (site #1) 198-64-28-6=64 gms.

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0.8 mi. S, 2.7 mi. E Ruidoso, 6500 ft., Lincoln Co., New Mexico.

13 August

+ blood, tissue
+ chrom. 606 ♂ *Thomomys bottae* ruidosae testes = 4 mm., abdom. 228-71-32-7 = 96 gm.

1.0 mi. S, 3.7 mi. E Ruidoso, 6700 ft., Lincoln Co., New Mexico.

13 August

+ blood, tissue
+ chrom. 607 ♀ *Thomomys bottae* ruidosae vag. open. emb. 1R-1L = 5 mm.; pelvis notched 198-55-26-6 = 87 gm.

0.3 mi. S, 3.8 mi. E Ruidoso, 6400 ft., Lincoln Co., New Mexico.

14 August

+ blood, tissue
+ chrom. 608 ♂ *Thomomys bottae* ? 20 acres. testes = 4 mm., abdom. site #1 214-65-31-6 = 93 g.

2.8 mi. S, 2.0 mi. W Nogal, 7300 ft., Lincoln Co., N. M.

18 August

+ tissue 609 ♀ *Thomomys bottae* vag. closed; null. (site #21) [died in trap] 180-62-28-5 = 62 g.

17 August

sperm
glans
testes (in alc. & carnoy) + tissue, blood
+ chrom. 610 ♂ *Thomomys bottae* testes = 15 mm., scrotal (site #6) 226-70-32-7 = 105 gm.

~~glans~~
~~testes~~
(~~inalc.~~) + tissue, blood
+ chrom. 611 ♀ *Thomomys bottae* vag. closed; emb. 1R-1L = 1 mm. (site #8) 205-61-29-6 = 82 gm.

glans
testes
(inalc.) + tissue, blood
+ chrom. 612 ♂ *Thomomys bottae* testes = 5 mm., abdom. (site #9) 216-64-31-6 = 78 gm.

+ tissue, blood
+ chrom. 613 ♀ *Thomomys bottae* vag. closed; emb. 2R-1L = 3 mm. (site #10) 204-61-28-6 = 78 gm.

+ tissue, blood
+ chrom. 614 ♀ *Thomomys bottae* vag. closed, scars 2R-2L, light nipple wear (site #11) 214-64-30-6 = 99 gm.

+ tissue, blood
+ chrom. 615 ♀ *Thomomys bottae* vag. closed; multiparous. (site #12) 203-67-30-5 = 67 gm.

+ tissue, blood
+ chrom. 616 ♀ *Thomomys bottae* vag. closed; scars 2R-0L, light nipple wear (site #13) 213-72-31-6 = 91 gm.

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2.8 mi. S, 2.0 mi. W Nogal, 7300 ft., Lincoln Co., New Mexico.

17 August

+ tissue, blood + chrom. — 617 ♀ *Thomomys bottae* — vag. closed; scars 2R-2L — (site #14) 202-~~68~~ 62-28-5=65 gm.

+ tissue, blood + chrom. — 618 ♀ *Thomomys bottae* — vag. closed; scars 2R-1L — (site #15) 195-65-28-6=84 gm.

glans testes in alc. + tissue, blood + chrom. (Carnoy's) — 619 ♂ *Thomomys bottae* — testes = 15 mm., scrotal — (site #16) 215-68-30-6=87 gm.

0.3 mi. S, 3.8 mi. E Ruidoso, 6400 ft., Lincoln Co. N.M.

19 August

+ tissue, blood + chrom. — 620 ♀ *Thomomys bottae* — vag. closed; null. — (site #2) 213-70-29-6=96 gm.

glans testes in alc. + tissue, blood + chrom. ~~Carnoy's~~ — 621 ♂ *Thomomys bottae* — testes = 4 mm.; abdom. — (site #3) 196-63-31-6=90 gm.

glans testes in alc. + tissue, blood + chrom. (Carnoy's) — 622 ♂ *Thomomys bottae* — testes = 17 mm., scrotal — (site #4) 238-73-31-6=125 gm.

+ tissue, blood + chrom. — 623 ♀ *Thomomys bottae* — vag. closed; uterus slightly swollen — (site #5) 206-65-29-6=87 gm.

1 mi. N, 23.3 mi. W Whites City, 5800 ft., Eddy Co., New Mexico

23 August

+ tissue, blood — 624 ♀ *Thomomys bottae* — vag. closed, uterus swollen; parous — 198-57-26-6=68 gm.

+ tissue, blood — 625 ♀ *Thomomys bottae* — vag. closed, uterus swollen, parous — 194-52-25-6=66 gm.

+ tissue, blood — 626 ♂ *Thomomys bottae* — testes = 17 mm, scrotal — 190-[39]-27-6=120 gm

+ tissue, blood — 627 ♀ *Thomomys bottae* — vag. closed; uterus slightly swollen — 193-56-26-5=80 gm

+ tissue, blood — 628 ♂ *Thomomys bottae* — testes = 16 mm., scrotal — 226-70-28-6=121 gm

+ tissue, blood — 629 ♀ *Thomomys bottae* — vag. closed, pelvis notched. — 199-57-27-6=89 gm.

+ tissue, blood — 630 ♂ *Thomomys bottae* — testes = 12 mm, scrotal — 184-54-25-6=81 gm.

8.2 mi. N, 6.5 mi. E Ft. Davis, 4500 ft., Jeff Davis Co., Texas.

24 August

+ tissue, blood — 631 ♀ *Thomomys bottae* — vag. closed, uterus swollen, multiparous — 210-64-28-7=103 g

+ tissue, blood — 632 ♀ *Thomomys bottae* — vag. closed, parous — 218-67-28-7=122 g

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8.2 mi. N, 6.5 mi. E Ft. Davis, 4500 ft. Jeff Davis Co., Texas

24 August (con't)

+ tissue, blood
vag. closed; emb. 2R-1L=31 mm.
633 ♀ Thomomys bottae 198-56-27-7=120 gm

+ tissue, blood
vag. closed; nulliparous
634 ♀ Thomomys bottae 209-61-28-8=118 gm

+ tissue, blood
vag. closed, recent scars 2L-1R (2L-1R); nipple wear
635 ♀ Thomomys bottae 209-62-28-7=110 gm

+ tissue, blood
testes=20 mm, scrotal
636 ♂ Thomomys bottae 224-65-29-7=175 gm

+ tissue, blood
vag. closed; scars 1R-1L, nipple wear
637 ♀ Thomomys bottae 210-60-27-7=112 gm.

+ tissue, blood
vag. open, scars 1R-1L, slight nipple wear
638 ♀ Thomomys bottae 199-56-26-6=95 gm

+ tissue, blood
vag. closed, uterus swollen, parous
639 ♀ Thomomys bottae 196-57-27-7=105 g

+ tissue, blood
vag. closed, swollen; emb. 1R-1L: 5 mm.
640 ♀ Thomomys bottae 219-~~63~~ 65-30-7=125 gm

+ tissue, blood
vag. closed; uterus slightly swollen; parous
641 ♀ Thomomys bottae 212-65-26-7=93 gm.

4.0 mi. S, 9.5 mi. W Deming, 4350 ft., Luna Co., New Mexico

26 August

+ tissue, blood
+ reprod. tract in Alc.
+ sperm
testes=~~8~~ 11 mm, scrotal
642 ♂ Dipodomys ordii 233-126-37-14=49 g

+ tissue, blood
+ reprod. tract
+ sperm
testes=~~[illegible]~~ 12 mm, scrotal
643 ♂ Dipodomys merriami 245-132-38-14=49 g

+ tissue, blood
vag. closed; emb. 2R-1L=11 mm
644 ♀ Dipodomys merriami 262-155-39-14=53 g

+ tissue, blood
+ reprod. tract
+ sperm
645 ♂ Dipodomys ordii 248-139-39-13=52 g

27 August

+ tissue, blood
vag. ~~closed~~ open, swollen; uterus slightly swollen, pelvis closed
skeleton only 646 ♀ Dipodomys ordii 238-126-38-13=49 g

+ tissue, blood
vag. ~~closed~~ open, swollen, nulliparous
skeleton only 647 ♀ Dipodomys merriami 244-142-38-14=37 g

+ tissue, blood
juv., vag. open, swollen, nulliparous
skeleton only 648 ♀ Dipodomys ordii ~~207+~~ 207-115-37-12=25 g

+ tissue, blood
vag. closed, nulliparous
skeleton only 649 ♀ Dipodomys ordii 233-127-38-13=52 g

+ sperm
+ tissue, blood
+ glans
testes=11 mm, scrotal
skeleton only 650 ♂ Dipodomys ordii 248-140-39-14=54 g

+ sperm
+ tissue, blood
testes=4 mm, scrotal
skeleton only 651 ♂ Perognathus penicillatus 173-94-21-8=14 g

(over)

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8.6 mi. S, 8.5 mi. W Deming, 4400 ft., Luna Co, New Mexico.

27 August (con't)

+sperm + tissue, blood + glans skeleton only 652 ♂ *Dipodomys merriami* — testes = 7 mm, ± scrotal — 250-150-38-13=39g

+sperm + tissue, blood + glans skeleton only 653 ♂ *Dipodomys merriami* — testes = 11 mm, scrotal — 250-149-38-15=49g

+tissue, blood skeleton only 654 ♀ *Dipodomys ordii* — vag. ~~clos~~ open, blood; recent parturition 2R-1L — 240-138-37-13=57g

+sperm + tissue, blood + glans skeleton only 655 ♂ *Dipodomys merriami* — testes = 8 mm, scrotal — 238-138-39-14=44g

1.5 mi. SW River Spring Lakes, Adobe Valley, 6490 ft. Mono Co. California

31 August

Prep. by J.C. Hafner

+ tissue, blood 656 ♀ *Microdipodops megacephalus* — vag. closed, parous — 160-90-25-10=11g

+ tissue, blood 657 ♂ *Dipodomys ordii* — testes = 5mm, abdom. — 226-127-40-14=35g

8.5 mi. S Mina, 4450 ft., Mineral Co., Nevada.

31 August

+ tissue, blood + sperm 658 ♂ *Dipodomys deserti* — testes = 5mm abdom. — 328-204-55-18=90g

+ tissue, blood 659 ♀ *Dipodomys merriami* — vag. closed. emb 1R-2L = 4mm. — 224-133-38-13=32g

+ tissue, blood + reprod. tract 660 ♂ *Dipodomys merriami* — testes = 10 mm, scrotal — 246-146-37-14=41g

+ tissue, blood (661) ♀ *Microdipodops megacephalus* — vag. closed, parous. (FROM N Fletcher locality !!!) — 154-85-26-11=11g

1/4 mi. N Fletcher, 6100 ft., Mineral Co., Nevada.

31 August

+ tissue, blood + sperm 662 ♂ *Microdipodops megacephalus* — testes = 4 mm, abdom. — 149-83-24-10=10g

+ tissue, blood + repro. tract + sperm 663 ♂ *Microdipodops megacephalus* — testes = 6 mm, abdom.? — 150-84-25-10=10g

+ tissue, blood 664 ♂ *Microdipodops megacephalus* — testes = 5 mm, abdom. — 155-86-24-11=11g

+ tissue, blood 665 ♂ *Dipodomys ordii* (panamintinus ?) — testes = 7 mm., scrotal — 277-160-41-15=49g

+ tissue, blood 666 ♂ *Dipodomys merriami* — testes = 6 mm, abdom. — 240-137-39-14=32g

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1/4 mi. N Fletcher, 6100 ft. Mineral Co., Nevada

31 August (con't)

667 Dipodomys — Frozen – OLD
668 Dipodomys — " "
669 Dipodomys — " "
670 Microdipodops megacephalus — " "

6 mi. N, 31 mi. W Hiko, 4800 ft., Lincoln Co., Nevada

18 September

+ tissue + stomach ~~+ skel.~~ 671 ♀ Microdipodops megacephalus — vag. closed, null. — [SE 8] — [tail dia. = 4 mm] — 153-85-26-12 = 13 g.
+ tissue + skel. + stomach ~~+ skel.~~ 672 ♀ Microdipodops megacephalus — vag. closed, null.(?) — [SE 27 a] — [tail dia. = 4 mm] — 149-80-25-11 = 13 g.
+ tissue + carcass (alc.) + stomach ~~+ skel.~~ 673 ♂ Microdipodops megacephalus — testes = 5 mm, (abdom.?), tub. visib. — [SE 27 b] — [tail dia. = 3.5 mm] — 152-85-26-11 = 12 g.
(alc.) carcass + tissue + stomach ~~+ skel.~~ 674 ♂ Microdipodops pallidus — testes = 4.5 mm (scrotal?) — [SE 42] — [tail dia. = 4 mm.] — 149-83-25-11 = 13 g.
" + tissue + stomach ~~+ skel.~~ 675 ♂ Microdipodops megacephalus — testes = 5.5 mm (scrotal?), tub. visib. — [NE 17] — [tail dia. = 4 mm.] — 158-88-27-11 = 13 g.
" + tissue + stomach ~~+ skel.~~ 676 ♂ Microdipodops megacephalus — testes = 5.5 mm, scrotal, tub. visib. — [NE 54] — [tail dia = 3.5 mm] — 159-89-26-11 = 13 g.
+ tissue + skel. 677 ♀ Dipodomys ordii ? — vag. closed, scars 1R-1L — 268-154-42-14 = 63 g.
+ tissue + skel. 678 ♀ Dipodomys ordii ? — vag. closed, null. — 270-158-42-14 = 61 g.
reprod. tract alc. + ~~carcass~~ + tissue + skel. 679 ♂ Dipodomys — testes = 11 mm, scrotal; tub. visib. — 283-165-44-16 = 73 g.

19 September

+ tissue + skel. + stomach 680 ♂ Microdipodops pallidus — testes = 4 mm, ± scrotal, SV not visib. — [SW 18] night — [tail dia. = 3.5 mm.] — 154-86-26-11 = 13 g.
+ tissue + skel. + stomach 681 ♀ Microdipodops pallidus — vag. closed, null.? — [SW 12] night — [tail dia. = 4 mm] — 153-83-25-11 = 12 g.
+ tissue + skel. + stomach 682 ♀ Microdipodops pallidus — vag. closed, null. — [NW 48] night — [tail dia = 3 mm] — 158-88-25-11 = 13 g.
+ stomach + tissue + carcass (alc.) 683 ♂ Microdipodops megacephalus — testes = 6 mm, scrotal, SV = 10 mm, swollen — [NW 45] night grassy area — [tail dia. = 4 mm] — 159-88-27-12 = 15 g.
+ tissue + stomach + skel. 684 ♂ Microdipodops pallidus — testes = 3.5 mm, abdom., SV not visib. — [NW 47] night — [tail dia. = 3 mm] — 147-83-26-11 = 13 g.
+ tissue + stomach + skel. 685 ♂ Microdipodops pallidus — testes = 4.5 mm, abdom. SV not visib. — [NW 37] night — [tail dia. = 3.5 mm.] — 153-89-25-11 = 13 g.
+ tissue + stomach + skel. 686 ♂ Microdipodops pallidus — testes = 4.0 mm, abdom. SV = 4 mm, thin — [NW 8] at night — [tail dia = 4 mm] — 160-91-26-11 = 14 g.
+ tissue + stomach + carcass (alc.) 687 ♂ Microdipodops megacephalus — testes = 5.0 mm, scrotal, SV = 9 mm, swollen — [SE 45] night — [tail dia. = 3 mm.] — 158-85-25-11 = 13 g.

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6 mi. N, 31 mi. W Hiko, 4800 ft., Lincoln Co., Nevada.

19 September (con't)

	No.	Sex	Specimen	Trap	Measurements
+ tissue + stomach + skel.	688	♀	vag. closed, lactating, scars 2R-0L *Microdipodops megacephalus*	[SE 48] morning	[tail dia. = 4.5 mm] 152-78-25-13 = 16 g.
skeleton only	689	♂	testes = 4.5 mm, abdom. *Microdipodops pallidus*	[NW 32] night	147-80-25-10 = [no wt.]
skeleton only	690	♂	testes = 4 mm, abdom.? SV = 2 mm *Microdipodops pallidus*	[SW 9] night	[tail dia. = 3 mm.] 150-84-25-11 = [no wt.]
+ tissue ~~carcass~~ (alc.) Alc.	691	♂	testes = 5.5 mm, scrotal, SV = 6 mm *Perognathus longimembris*		111-[54]-19-7 = 7.5 g.
+ tissue ~~Alc.~~ + skel. only	692	♀	vag. closed. scars 3R-2L *Perognathus longimembris*		124-64-~~24~~ 18-7 = 7 g.
+ tissue ~~+ carcass~~ (alc.) Alc.	693	♂	testes = 6 mm, ± scrotal. SV = 5 mm. *Perognathus parvus*		135-[54]-24-9 = 20 g.
+ tissue Alc.	694	♂	testes = 8 mm, abdom. *Onychomys torridus*		128-44-21-18 = 19 g.
+ tissue skeleton only	695	♀	vag. closed, nipple wear (old), parous *Dipodomys ordii?*		267-154-39-13 = 58 g.
+ tissue skeleton only	696	♀	vag. closed, light nipple wear, parous *Dipodomys ordii?*		276-159-43-14 = 65 g.
+ tissue skeleton only	697	♂ ~~♀~~	testes = 5 mm, abdom. *Dipodomys ordii?*		280-165-42-14 = 61 g.
+ tissue skeleton only	698	♂	testes = 5 mm, abdom. *Dipodomys ordii?*		277-164-42-14 = 67 g.
+ tissue Alc.	699	♂	testes = 9 mm, scrotal; SV = 11 mm. *Dipodomys ordii?*		266-155-43-14 = 65 g.

10 mi. ~~N~~ E, 15 mi. ~~E~~ N Warm Springs, 6000 ft., Nye Co., Nevada

20 September

	No.	Sex	Specimen	Trap	Measurements
[+ tissue + stomach] skeleton only	700	♀	vag. closed, parous. *Microdipodops pallidus*	[night 1-6] Art.	[tail dia. = 3.5 mm.] 157-84-26-12 = 13 g.
[" "] skeleton only	701	♂	testes = 3 mm, abdom. *Microdipodops pallidus*	[night 1-36] Art. mix	[tail dia. = 3.5 mm] 162-90-25-11 = 13 g.
[" "] skeleton only	702	♂	testes = 4 mm, abdom. *Microdipodops megacephalus*	[night 1-44] Art.	145-80-24-10 = 11 g.
[" "] skeleton only	703	♂	testes = 3.5 mm, abdom. *Microdipodops pallidus*	[morning 1-48] Art.	156-84-26-12 = 12 g.
[" "] skeleton only	704	♂	testes = 3 mm, abdom. *Microdipodops pallidus*	[night 2-10] Art. mix	[tail dia. = 3.5 mm.] 161-91-26-12 = 13 g.
[" "] skeleton only	705	♀	vag. closed, parous *Microdipodops pallidus*	[night 2-11] Art. mix	[tail dia. = 4 mm] 159-85-26-11 = 13 g.
[" "] skeleton only	706	♀	vag. closed, null. *Microdipodops pallidus*	[night 2-23] Chry.	[tail dia. = 3 mm] 152-80-25-11 = 11 g.
[" "] skeleton only	707	♂	testes = 3 mm, abdom *Microdipodops pallidus*	[night 2-24] chry. mix.	[tail dia. = 3 mm.] 156-84-25-11 = 12 g.
[" "] skeleton only	708	♀	vag. closed, parous *Microdipodops pallidus*	[night 2-37 chry. mix - grass]	[tail dia. = 3.5 mm] 148-80-26-11 = 11 g.
skeleton only	709	♂	testes = 3.5 mm, abdom. *Microdipodops pallidus*	[night 2-39] chry. mix	[tail dia. = 3.5 mm] 145-81-26-11 = 13 g.

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10 mi. ~~W~~ E, 15 mi. ~~E~~ N Warm Springs, 6000 ft., Nye Co., Nevada

20 September (con't)

[+ tissue + stomach] — vag. closed, null.? — [night 2-44] chry. mix — [tail dia. = 4 mm.]
skeleton only 710 ♀ Microdipodops pallidus 156-89-26-11 = 11 g.
[" "] — testes = 3 mm, abdom. — [night 2-45] chry. — [tail dia. = 4 mm.]
skeleton only 711 ♂ Microdipodops pallidus 163-88-25-12 = 13 g.
[" "] — testes = 3 mm, abdom. — [night 3-8] chry. — [tail dia. = 4 mm.]
skeleton only 712 ♂ Microdipodops pallidus 154-85-26-11 = 12 g.
[" "] — vag. closed, null.? — [night 3-11] chry. — (tail dia. = 3.5 mm)
skeleton only 713 ♀ Microdipodops pallidus 150-84-26-11 = 12 g.
[" "] — vag. closed, parous — [night 3-18, chry.] [tail dia. = 4 mm]
skeleton only 714 ♀ Microdipodops pallidus 151-77-25-12 = 12 g.
[" "] — testes = 4 mm, abdom. — [night 3-22] Art. mix — [tail dia. = 4 mm.]
skeleton only 715 ♂ Microdipodops pallidus 160-87-26-11 = 14 g.
[" "] — testes = 3.5 mm, abdom. — [morning 3-50] chry. — [tail dia. = 4 mm.]
skeleton only 716 ♂ Microdipodops pallidus 159-87-26-11 = 12 g.
[" "] — testes = 4 mm, abdom. — [night 4-20] chry. — [tail dia. = 3.5 mm.]
skeleton only 717 ♂ Microdipodops pallidus 148-79-25-11 = 12 g.
[" "] — testes = 3.5 mm., abdom. — [night 4-25] Art. mix — [tail dia. = 3.5 mm.]
skeleton only 718 ♂ Microdipodops pallidus 153-85-25-12 = 12 g.
[" "] — vag. closed, parous. — [night 4-27] Art. mix — [tail dia. = 3.5 mm.]
skeleton only 719 ♀ Microdipodops pallidus 155-85-25-11 = 12 g.
[" "] — testes = 4.5 mm, abdom. — [night 4-28] chry. mix — [tail dia. = 3.5 mm]
skeleton only 720 ♂ Microdipodops pallidus 158-85-25-11 = 13 g.
[" "] — testes = 4 mm, abdom. — [night 4-43] chry. — [tail dia. = 3 mm]
skeleton only 721 ♂ Microdipodops pallidus 153-85-25-10 = 12 g.
[" "] — vag. closed, parous — [night 4-50] chry. — [tail dia. = 3.5 mm]
skeleton only 722 ♀ Microdipodops pallidus 158-85-25-11 = 13 g.
[" "] — testes = 3 mm, abdom. — [night 4-54] chry. — [tail dia. = 4 mm.]
skeleton only 723 ♂ Microdipodops pallidus 158-85-25-10 = 11 g.
[" "] — testes = 3 mm, abdom. — [morning 4-16] chry. — [tail dia. = 4 mm]
skeleton only 724 ♂ Microdipodops pallidus 146-80-25-12 = 13 g.
[" "] — testes = 4 mm, abdom. — [morning 4-25] Art. mix — [tail dia. = 3.5 mm]
skeleton only 725 ♂ Microdipodops pallidus 159-89-26-12 = 15 g.
[" "] — testes = 3.5 mm., abdom. — [morning 4-31] chry. — [tail dia. = 3 mm]
skeleton only 726 ♂ Microdipodops pallidus 148-81-25-11 = 12 g.
[" "] skull only — testes = 2.5 mm, abdom — Prep. 12 Oct. 1976 — [1-6a night]
~~+blood~~, tissue + chrom. 727 ♂ Microdipodops pallidus 151-79-25-11 = no wt.
[" "] — testes = 4.5 mm, abdom — Prep. 12 Oct. 1976 — [2-26 night]
+ blood, tissue 728 ♂ Microdipodops pallidus 151-82-26-11 = no wt.
[" "] — vag. closed, scars 1R-1L — Prep. 12 Oct. 1976 — [2-37 morning] Art. mix
+ blood, ~~tissue~~ 729 ♀ Microdipodops pallidus 164-88-26-11 = no wt.
[+ tissue] — vag. closed, scars 3R-3L
skeleton only 730 ♀ Perognathus longimembris 124-64-19-7 = 8 g.
["] — testes = 2.5 mm, abdom.
skeleton only 731 ♂ Perognathus longimembris 130-69-20-8 = 7 g.
["] — testes = 2.5 mm, abdom.
skeleton only 732 ♂ Perognathus longimembris 128-66-19-7 = 7 g.
["] — testes = 3 mm, abdom.
Skeleton only 733 ♂ Perognathus longimembris 123-60-18-6 = 7 g.
["] — vag. closed; scars 2R-3L
Skeleton only 734 ♀ Perognathus longimembris 123-62-20-7 = 8 g.

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10 mi. ~~N~~ E, 15 mi. ~~E~~ N Warm Springs, 6000 ft., Nye Co., Nevada.

[+ tissue] — testes = 3 mm, abdom.
skeleton only 735 ♂ *Perognathus longimembris* 130-68-19-7 = 8 g.
["] — vag. closed; scars 3R-2L
skeleton only 736 ♀ *Perognathus longimembris* 110-[50]-19-7 = 7 g.
["] — testes = 2.5 mm, abdom.
skeleton only 737 ♂ *Perognathus longimembris* 137-72-19-7 = 7 g.
["] — vag. closed; scars 1R-2L
skeleton only 738 ♀ *Dipodomys ordii* 237-139-39-13 = 47 g.
["] — vag. closed; scars 2R-1L
skeleton only 739 ♀ *Dipodomys ordii* 234-130-40-14 = 50 g.
["] — testes = 8 mm, abdom.
skeleton only 740 ♂ *Dipodomys ordii* 239-132-39-13 = 49 g.
["] — vag. closed, swoll.
skeleton only 741 ♀ *Dipodomys ordii* 233-130-39-14 = 47 g.
["] — testes = 6 mm, abdom.
skeleton only 742 ♂ *Dipodomys ordii* 246-140-41-14 = 51 g.
["] — testes = 5 mm, abdom.
skeleton only 743 ♂ *Dipodomys ordii* 256-144-42-14 = 52 g.
["] — testes = 6 mm, abdom.
skeleton only 744 ♂ *Dipodomys ordii* monoensis 242-138-40-15 = 54 g.
["] — testes = 9 mm, scrotal, SV = 12 mm. (round worms in gut)
skeleton only 745 ♂ *Peromyscus maniculatus* 158-67-21-17 = 20 g.
["] — testes = 10 mm, scrotal, SV = 10 mm. (round worms in gut)
skeleton only 746 ♂ *Peromyscus maniculatus* 153-70-20-18 = 21 g.
["] — testes = 9 mm, scrotal, SV = 13 mm. (round worms in gut)
skeleton only 747 ♂ *Peromyscus maniculatus* 149-63-20-17 = 19 g.
["] — testes = 6 mm, abdom., SV = 3 mm.
skeleton only 748 ♂ *Peromyscus maniculatus* 149-59-20-18 = 17 g.
["] — vag. closed, parous
749 ♀ *Peromyscus maniculatus* 139-61-20-19 = 13 g.
["] — testes = 6.5 mm, abdom.?
Skeleton only 750 ♂ *Onychomys* ~~torridus~~ leucogaster 137-50-20-15 = 17 g.

8.5 mi. S Mina, 4450 ft., Mineral Co., Nevada

31 August con't (see page 42)

~~+ blood~~, tissue + chrom. — testes = 9 mm, abdom.
751 ♂ *Dipodomys deserti* 344-206-55-19 = no wt.

2 mi. E Big Pine, Inyo Co., California

~~PE~~ 14 March (prep. Oct. 1976) coll. by B. Csuti

~~+ blood~~, tissue + chrom. — testes = 3 mm, abdom.
Skull only 752 ♂ *Perognathus longimembris* 134-73-19-8 = [no wt.]

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10 mi. N Wolf Hole, Mohave Co., Arizona

4 May (prep. Oct. 1976)
coll. by B. Csuti

~~+blood, tissue~~ + chrom. skull only 753 ♂ Perognathus longimembris — testes = 4.5 mm., abdom. — 135-74-19-8 = no wt.

3.5 mi. S, 12 mi. E Lubbock, 3200 ft., Lubbock Co., Texas

26 June

+blood, tissue + chrom. skull only 754 ♂ Perognathus hispidus ~~paradoxus~~ — testes = 9 mm, abdom. — (prep. October 1976) — 219-106-26-13 = no wt.

~~New Mexico~~

+ blood, tissue + chrom. 755 ♂ Perognathus flavescens — testes = 5 mm, abdom. — (prep. October 1976) — 133-69-19-8 = no wt.

Palm Desert, Riverside Co., California

July 1975 (prep. 29 September 1976)
coll. by J. Soloman

756 ♀ Dipodomys merriami — vag. open, swollen; uterus swollen — 148-145-39-15 = 46 g.

10.7 mi. S, 25 mi. W Gerlach, 3950 ft., Washoe Co., Nevada

20 September [prep. 30 sept]
[coll. by J.C. Hafner]

skeleton only 757 ♂ Peromyscus maniculatus — testes = 10 mm, scrotal, SV = 10 mm. — 141-59-19-18 = 18 g.

" 758 ♂ Peromyscus maniculatus — testes = 8 mm, scrotal, SV = 6 mm. — [" " " "] — 150-68-19-18 = 16 g.

" 759 ♂ Peromyscus maniculatus — testes = 7 mm, scrotal, SV = 3 mm. — [" " " "] — 164-74-21-19 = 18 g.

27.7 mi. N, 11.5 mi. W Sutcliffe, 3900 ft., Washoe Co., Nevada

20 September (con't) [prep. 30 Sept.]
[coll. by J.C. Hafner]

skeleton only 760 ♂ Peromyscus maniculatus — testes = 6 mm, scrotal, SV = 5 mm. — 154-70-20-17 = 17 g.

18.2 mi N, 16.8 mi. W Sutcliffe, 4 000 ft., Washoe Co., Nevada

20 Sept. (con't) [coll. by J.C. Hafner] [prep. 30 Sept.]

skeleton only 761 ♀ Peromyscus maniculatus — vag. closed, scars 12-16, nipple wear — 168-76-20-18 = 20 g.

Catalogue

Hafner, M.S.
1976

10.2 mi. N, 3.0 mi. E Gerlach, 4000 ft., Pershing Co., Nevada

21 September [prep. 30 sept.]

testes = 9 mm, scrotal, SV = 9 mm. [coll. by J.C. Hafner]

skeleton only 762 ♂ Peromyscus maniculatus 164-69-19-18 = 20 g.

testes = 8 mm, ± scrotal, SV = 5 mm. [" " " "]

" 763 ♂ Peromyscus maniculatus 173-81-21-19 = 19 g.

vag. closed., scars 2R-2L [" " " "]

" 764 ♀ Peromyscus maniculatus 155-65-19-18 = 14 g.

13.5 mi. N, 6.7 mi. E Gerlach, 4000 ft., Pershing Co., Nevada

21 September (con't) [Prep. 30 sept.]

testes = 6 mm, abdom. SV = 3 mm. [coll. by J.C. Hafner]

skeleton only 765 ♂ Peromyscus maniculatus 151-65-19-18 = 15 g.

2.0 mi. N, 9.8 mi. E Gerlach, 4350 ft., Pershing Co., Nevada

21 September (con't) [Prep. 30 Sept.]

testes = 7 mm, abdom., SV = 4 mm. [coll. by J.C. Hafner]

skeleton only 766 ♂ Peromyscus maniculatus 140-60-19-18 = 15 g.

1.1 mi. N, 0.4 mi. E Sulphur, 4000 ft., Humboldt Co., Nevada

22 September [Prep. 30 Sept.]

testes = 10 mm, scrotal., SV = 9 mm. [coll. by J.C. Hafner]

Skeleton only 767 ♂ Peromyscus maniculatus 175-78-20-18 = 19 g.

0.9 mi. S, 0.3 mi. E Sulphur, 4100 ft., Humboldt Co., Nevada

22 September (con't) [Prep. 30 Sept.]

testes = 11 mm, ± scrotal, SV = 9 mm. [coll. by J.C. Hafner]

skeleton only 768 ♂ Peromyscus maniculatus 162-73-20-18 = 18 g.

Hastings Reservation, Carmel Valley, 1800 ft., Monterey Co. Calif.

13 November

♂ testes scrotal ~~vag. closed~~ = 14 mm. [coll. by J.L. Patton]

769 Thomomys bottae 238 · 77 · 32 · 9 = 159 gr.

Catalogue

Hafner, M.S.
1976

0.5 mi. W Devore, 1800 ft., San Bernardino Co., California

21 September

+ blood, tissue skeleton only	770	♂ *Perognathus fallax* — testes = 4 mm, abdom. SV = –	(prep. 28 November) (coll. by D. Friesen)	179-104-23-9 = 18 gm.
+ blood tissue skeleton only	771	♂ *Perognathus fallax* — testes = 7 mm, abdom. SV = 2 mm.	(" " ") (" " " ")	171-92-23-10 = 21 g.

3.6 mi. SW Frazier Park, Chuchupate Campground, Ventura Co., California.

25 September

[+ blood, tissue] skeleton only	772	♀ *Perognathus californicus* — vag. closed, null.?	(prep. 28 November) (coll. by D. Friesen)	212-127-27-13 = 27 g.
["] skeleton only	773	♂ *Perognathus californicus* — testes = 5 mm, abdom., SV = –	(" " ") (" " " ")	216-131-28-13 = 29 g.
["] skeleton only	774	♂ *Perognathus californicus* — testes = 5 mm, abdom., SV = –	(" " ") (" " " ")	208-123-26-12 = 23 g.

6.7 mi. NE Soledad, Monterey Co., 1800 ft., California

28 September

[+ blood, tissue] skeleton only	775	♀ *Perognathus californicus* — vag. closed, scars (2 gen.) 5R-6L	(prep. 28 November) (coll. by D. Friesen)	210-118-25-14 = 25 g.
[" "] skeleton only	776	♀ *Perognathus californicus* — vag. closed, scars 3R-3L	(" " ") (" " " ")	207-118-26-13 = 28 g.
[" "] skeleton only	777	♂ *Perognathus californicus* — testes = 4 mm, abdom., SV = –	(" " ") (" " " ")	182-[93]-25-13 = 23 g.
[" "] skeleton only	778	♂ *Perognathus californicus* — testes = 5 mm, abdom., SV = –	(" " ") (" " " ")	194-105-25-13 = 20 g.

6.8 mi. NE Soledad, San Benito Co. 1960 ft., California.

28 September (con't)

+ blood, tissue skeleton only	779 ~~778~~	♀ *Perognathus californicus* — vag. closed. null.	(prep. 28 November) (coll. by D. Friesen)	196-112-26-13 = 24 g.

Hastings Nat. Hist. Res., Carmel Valley, Monterey Co. Calif. 1800 ft.

20 November (prep 28 November)

skeleton only	780	♂ *Perognathus californicus* — testes = 5 mm, abdom. SV = 2.5 mm.		206-111-26-13 = 27 g.
skeleton only	781	♂ *Perognathus californicus* — testes = 4 mm, abdom. SV = 2 mm.	(" " ")	212-121-26-14 = 25 g.
skeleton only	782	♂ *Perognathus californicus* — testes = 3 mm, abdom. SV = –	(" " ")	180-[93]-24-13 = 20 g.
~~skeleton only~~	783	♀ *Perognathus californicus* — vag. closed. parous.	(prep. by W. B. Cetta) (" " ")	211-127-27-13 = 24 g.

Catalogue

Hafner, M.S.
1976

Hastings Nat. Hist. Res., Carmel Valley, Monterey Co., 1800 ft., Calif.

20 November (con't)

skeleton only 784 ♂ *Dipodomys venustus* (testes = mm, abdom.) 310-178-47-22 = 75 g.

1.5 mi. N Chilcoot, 5120 ft., Plumas Co., California

12 December (Coll. 10 ~~Nov~~ October)

+ blood, tissue
skeleton only 785 ♂ *Perognathus parvus* (testes = 5 mm, abdom.) 177-93-23-9 = 13 g.

+ blood, tissue
skeleton only 786 ♂ *Perognathus parvus* (testes = 6 mm, abdom.) 189-100-24-11 = 20 g.

mi. NE La Cañada (by rd.), San Gabriel Mtns, Los Angeles Co., California.

12 December (Coll. 25 November)
by M.F. Smith

+ blood, tissue
skeleton only 787 ♂ *Perognathus californicus* (testes = 5 mm, abdom. SU = 3.5 mm.) 205-116-27-13 = 22 g.

+ blood, tissue
skeleton only 788 ♂ *Perognathus californicus* (~~testes~~ 5 mm, abdom. SU = 4 mm.) 209-125-26-13 = 21 g.

+ blood, tissue
skeleton only 789 ♀ *Perognathus californicus* (vag closed; scars (2 gen.) R = 3 recent, 2 old, L = 2 recent, 2 old.) 207-122-26-13 = 23 g.

+ blood, tissue
skeleton only 790 ♂ *Perognathus californicus* (testes = 4.5 mm, abdom. SU = 4 mm.) 221-131-28-13 = 21 g.

+ blood, tissue
skeleton only 791 ♀ *Perognathus californicus* (vag. closed; null.) 211-124-26-13 = 20 g.

+ blood, tissue
skeleton only 792 ♂ *Perognathus californicus* (testes = 5 mm, abdom. SU = 3.5 mm.) 212-125-26-13 = 22 g.

[END COLLECTING 1976]

Catalogue

Hafner, M.S.
1977

1.5 mi. N Chilcoot, 5120 ft., Plumas Co., California

13 January (Captured 9 October 1976)

+ chromo. + blood, tissue
testes = 3.5 mm, abdom.
skull only 793 ♂ *Microdipodops megacephalus* 155-87-25-11 = no wt.

+ chromo. + blood, tissue
testes = 3 mm, abdom.
skull only 794 ♂ *Microdipodops megacephalus* 145-85-26-10 = no wt.

6 mi. N, 31 mi. W Hiko, 4800 ft., Lincoln Co., Nevada

26 March

795 ♂ *Microdipodops* ~~meg~~ LIVE [Line 1 E #32]

27 March

+ stomach
vag. closed; emb. 4R-1L = 5 mm. ~~[Line 1 E #33]~~
skel. only 796 ♀ *Peromyscus maniculatus* 141-58-20-16 = 17 gm.

+ tissue + stomach
vag. [open] emb. 2R-1L = 17 mm. ~~[Line 1A E #31]~~ [Line 1 E #33] [tail dia = 4 mm.]
skel. only 797 ♀ *Microdipodops megacephalus* 143-77-26-11 = 16 g.

+ tissue + stomach + reprod. tract.
scrotal testes = 6 mm; SV = 10 mm, tub. visib. [Line 1A E #31] [tail dia. = 4.5 mm]
skel. only 798 ♂ *Microdipodops megacephalus* 149-81-25-11 = 13.5 g.

+ tissue + stomach
vag. open. parous, no visib. scars [Line 1A W #49]
skel. only 799 ♀ *Microdipodops pallidus* 148-81-26-11 = 13.5 g.

+ tissue + stomach + reprod tract
testes = 6 mm, scrotal, SV = 13 mm. tub. visib. round ~~tape~~ worms in gut. [Line 1A E #49] [tail dia. = 4(-) mm] caught by tail
skel. only 800 ♂ *Microdipodops* 146-[81]-26-11 = 14 g.

← Possible hybrid (pelage color)

MSH 795 is still alive — I think its a *M.m*

Catalogue

Hafner, M.S.
1977

6.1 mi. E (by road) La Joyita, 210 m, Sonora, México.

2 July

tissue, blood — vag. closed, scars 1R-1L
skeleton only 801 ♀ *Dipodomys merriami* 241 - 147 - 37 - 14 = 31 g
tissue, blood, reprod. tract — testes = 10 mm, scrotal; SV ≐ 19 mm.
skeleton only 802 ♂ *Dipodomys merriami* 205 - [100] - 39 - 16 = 42 g.
tissue, blood — vag. closed, scars 1R-1L
skeleton only 803 ♀ *Dipodomys merriami* 240 - 144 - 38 - 15 = 29.5 g
+ tissue, blood + reprod. tract — testes = 8 mm, scrotal; SV = 9 mm.
+ skeleton 804 ♂ *Perognathus penicillatus* 184 - 102 - 23 - 9 = 17 g.
+ tissue, blood — vag. closed.; lactating, scars 3R-2L
+ skeleton 805 ♀ *Perognathus* 171 - [87] - 23 - 9 = 18 g

1.9 mi. W (by road) La Joyita, 180 m, Sonora, México.

2 July

+ tissue, blood — vag. closed, uterus swollen; scars 1R-1L
skeleton only 806 ♀ *Dipodomys merriami* 238 - 139 - 38 - 14 = 33.5 g

32.4 mi. (by road) N El Chinero, ca. 10 m, Baja California, México.

3 July

+ blood, tissue — vag. closed, nulliparous. [locality 4]
skeleton only 807 ♀ *Dipodomys deserti* 300 - [173] - 54 - 18 = 82 g.
+ tissue, blood — vag. closed; nulliparous [" "]
skeleton only 808 ♀ *Dipodomys deserti* 305 - [175] - 56 - 19 = 94 g.
+ tissue, blood ~~chrom.~~ — ~~[illegible]~~ . vag. closed, null. [" "]
809 ♀ [redacted] *Dipodomys deserti* 340 - ~~25~~ 215 - 54 - 19 = 80 g.
+ tissue, blood + chrom. — testes = 8 mm, abdom. [" "]
810 ♂ *Dipodomys deserti* 282 - [150] - 55 - 19 = 91 g.
+ tissue, blood ~~[illegible]~~. — testes = 7 mm, scrotal [locality 2] 177 - 100 - 24 - 9 = 17.5 g.
811 ♂ *Perognathus* ~~177 - 98 - 23 - 8 = 12 g.~~
+ tissue, blood — vag. closed; null. [" "]
skeleton only 812 ♀ *Perognathus* 177 - 98 - 23 - 8 = 12 g.
+ tissue, blood — testes = 5 mm., abdom. [" "]
skeleton only 813 ♂ *Perognathus* 181 - 104 - 23 - 8 = 14 g.
sperm + tissue, blood + reprod. tract — testes = 7 mm, scrotal [locality 4]
+ skeleton 814 ♂ *Perognathus* 128 - [50] - 24 - 9 = 19 g.

Catalogue

Hafner, M.S.

1977

~~3.0~~ 6 km S, ~~13.5~~ 17 km E Valle de la Trinidad, 905 m., Baja California, México.

3 July

+ tissue, blood — vag. closed, old scars 2R-2L
815 ♀ Thomomys bottae 203-68-28-8=89g.

+ tissue, blood — testes = 4 mm, abdom.
816 ♂ Thomomys bottae 215-68-28-7=110g.

+ tissue, blood — vag. closed, null.
817 ♀ Thomomys bottae 202-69-27-7=80g.

+ tissue, blood — vag. closed, parous, no scars.
818 ♀ Thomomys bottae 209-68-28-7=91g.

+ tissue, blood + chromosomes — testes = 4 mm, abdom
819 ♂ Thomomys bottae 208-70-29-8=95g.

4 July

+ tissue, blood — testes = 4 mm, abdom.
Skeleton only 820 ♂ Dipodomys merriami 233-144-37-15=32g.

+ tissue, blood — vag. closed, null.
Skeleton only 821 ♀ Dipodomys merriami 220-130-38-14=31g.

+ tissue, blood + reprod. tract — testes = 10 mm, scrotal.
Skeleton only 822 ♂ Dipodomys merriami 256-155-~~40~~ 40-15=45g.

+ tissue, blood + reprod. tract — testes = 10 mm, scrotal
Skeleton only 823 ♂ Dipodomys agilis 253-[133]-42-17=63g.

+ tissue, blood — vag. closed, null.
Skeleton only 824 ♀ Dipodomys agilis 270-168-42-17=55g.

+ tissue, blood + chrom. — testes = 5 mm, abdom.
825 ♂ Dipodomys agilis 293-177-42-20=62g.

+ tissue, blood — vag. closed, old scars 2L-1R
826 ♀ Thomomys bottae 198-64-28-8=105g.

+ tissue, blood — vag. closed; null.
827 ♀ Thomomys bottae 202-67-27-7=90g.

5 July

+ tissue, blood — testes = 10 mm, abdom.
828 ♂ Thomomys bottae 231-78-28-8=130g.

+ tissue, blood ~~+ chromosomes~~ — testes = 6 mm, abdom.
829 ♂ Thomomys bottae 206-72-30-8=105g.

+ tissue, blood — testes = 13 mm, ± scrotal
830 ♂ Thomomys bottae 223-72-28-8=139g.

+ tissue, blood — testes = 4 mm, abdom.
831 ♂ Thomomys bottae 233-82-28-7=115g.

+ tissue, blood — vag. closed, parous, no visib. scars
832 ♀ Ammospermophilus leucurus 180-[29]-39-15=103g.

+ tissue, blood + chrom. — testes = 6 mm, abdom.
833 ♂ Spermophilus tereticaudus 244-85-35-7=103g.

Catalogue

Hafner, M.S.
1977

2.4 km. W Mission Santo Domingo, 22 m., Baja California, México.

7 July

skull only 834 — *Vulpes macrotis tenuirostris* — no measurements (pick-up)

+ tissue + reprod. tract, + sperm; skeleton only
835 ♂ *Dipodomys* — testes: ca. 12 mm, scrotal — 275-169-42-20 = 52 g.

+ tissue, blood
836 ♂ *Dipodomys* — testes = 9 mm, scrotal, SV = 16 mm. tub. visib. — 273-160-41-19 = 51 g.

2.4 km. S, 5.0 km. W Mission Santo Domingo, 30 m, Baja California, México.

7 July

+ tissue, blood
837 ♂ *Dipodomys* — testes = 11 mm, scrotal; SV = 15 mm, tub. visib. — 279-168-41-18 = 60 g.

+ tissue, blood
838 ♂ *Dipodomys* — testes = 10 mm, scrotal; SV = 15 mm, tub. visib. — 290-177-42-18 = 61 g.

+ tissue, blood
839 ♀ *Dipodomys* — vag. swollen (open), emb. 2R-1L = 5 mm. — 278-167-40-~~14~~ 17 = 53 g.

4.5 km. S, 14 km W El Rosarito, 1 m., Baja California México

8 July

+ tissue, blood
840 ♀ *Thomomys bottae* — vag. closed; nulliparous — 195-66-26-7 = 79 g.

+ tissue, blood
841 ♂ *Thomomys bottae* — testes = 7 mm, abdom. — 202-66-28-7 = 87 g.

+ tissue, blood
842 ♀ *Thomomys bottae* — vag. closed, faint scars 1R-2L — 203-69-29-6 = 74 g.

+ tissue, blood
843 ♀ *Thomomys bottae* — vag. closed, nulliparous — 187-65-25-6 = 76 g.

+ tissue, blood
844 ♀ *Thomomys bottae* — vag. closed, faint scars: 2R-1L — 191-64-26-7 = 84 g.

+ tissue, blood
845 ♀ *Thomomys bottae* — vag. closed; uterus swollen — 173-55-24-6 = 70 g.

+ tissue, blood
846 ♀ *Thomomys bottae* — vag. closed, parous — 185-64-26-6 = 68 g.

+ tissue, blood
847 ♀ *Thomomys bottae* — vag. closed, nulliparous — 178-62-26-5 = 60 g.

+ tissue, blood
848 ♂ *Thomomys bottae* — testes = 5 mm, abdom. — 185-63-26-6 = 63 g.

partial cranium, partial mandibles 849 Phoca — pick-up [no measurements]

Catalogue

Hafner, M.S.
1977

4.5 km. S, 14 km. W El Rosarito, 1 m., Baja California, México

8 July (con't)

Cranium Only 850 Zalophus — pick-up [no measurements]

16 Km. S, 5 km. W Punta Prieta, 110 m., Baja California, México

8 July

+tissue, blood +chrom. 851 ♀ Dipodomys peninsularis peninsularis [locality 1] — vag. open; uterus swollen, no visib. scars — 290-173-42-18=51g.

+tissue (old?) +reprod. tract Skeleton Only 852 ♂ Dipodomys merriami platycephalus [locality 2] — testes = — mm, scrotal. — 254-158-39-17=38g.

3 km. W Ciudad Constitución, 70 m., Baja California Sur, México.

11 July

+tissue, blood 853 ♂ Thomomys bottae — testes = 14 mm; scrotal; tub. visib. — 253-90-32-9=190g

+tissue, blood 854 ♀ Thomomys bottae — vag. closed; emb. 2R-3L = 8 mm. — 223-78-28-8=125g.

+tissue, blood 855 ♀ Thomomys bottae — vag. closed; uterus swollen — 184-68-28-7=62g.

+tissue, blood 856 ♀ Thomomys bottae — vag. closed; uterus swollen — 238-82-30-8=160g.

+tissue, blood 857 ♀ Thomomys bottae — vag. closed; emb. 3R-3L = 4 mm. — 225-75-30-9=150g.

+tissue, blood 858 ♂ Thomomys bottae — testes: 10 mm; scrotal — 239-74-32-9=160g.

+tissue, blood 859 ♀ Thomomys bottae — vag. closed; uterus slightly swollen — 202-66-29-8=82g.

+tissue, blood 860 ♀ Thomomys bottae — vag. closed; uterus slightly swollen — 198-68-30-7=82g.

+tissue, blood +chrom. 861 ♂ Thomomys bottae — testes = 7 mm; abdom. — 229-85-32-8=87g.

+tissue, blood 862 ♀ Thomomys bottae — vag. closed; uterus swollen. — 230-75-31-7=115g.

Calalogue

Hafner, M.S.
1977

3 km. S Santa Rosalia, 10 m., Baja California Sur, México.

10 July

+ tissue, blood
+ chrom.
testes = 5 mm.; abdom.
863 ♂ *Ammospermophilus leucurus* 226-77-36-14 = 85 g.

2 km. N Las Pocitas, 110 m., Baja California Sur, México.

13 July

+ tissue, blood
+ reprod. tract
+ sperm
testes = 8 mm, scrotal
864 ♂ *Perognathus baileyi* 206-115-25-10 = 24.5 g.

+ tissue, blood
vag. closed; emb: 2R-1L = 7 mm.
865 ♀ *Perognathus baileyi* 194-103-24-10 = 20 g.

+ tissue, blood
vag. closed; emb: 2R-1L = 4 mm.
866 ♀ *Perognathus baileyi* 193-106-25-10 = 18 g.

+ tissue, blood
vag. closed; emb: 2R-1L = 12 mm.
867 ♀ *Perognathus baileyi* 197-109-26-10 = 22 g.

+ tissue, blood
+ reprod. tract
testes = 8 mm, scrotal
868 ♂ *Perognathus baileyi* 196-105-25-10 = [no wt.]

+ tissue, blood
+ reprod. tract
+ sperm
+ chrom.
testes = 10 mm, SVC 16 mm; scrotal.
869 ♂ *Dipodomys* 297-173-43-20 = 67 g.

6 km. N, 10 km. E Santiago, 60 m., Baja California Sur, México.

14 July

+ tissue, blood
vag. closed; null.?
870 ♀ *Thomomys bottae* (specimen eaten by dog 14 July) 208-68-28-8 = 130 g.

+ tissue, blood
testes = 10 mm; scrotal
871 ♂ *Thomomys bottae* 205-69-31-8 = 125 g.

+ tissue, blood
testes = 11 mm, scrotal; tub. visib.
872 ♂ *Thomomys bottae* 227-74-31-8 = 152 g.

+ tissue, blood
testes = 7 mm, scrotal.
873 ♂ *Thomomys bottae* 202-58-27-7 = 108 g.

+ tissue, blood
vag. closed; null.
874 ♀ *Thomomys bottae* 201-59-28-7 = 118 g.

+ tissue, blood
vag. closed; null.
875 ♀ *Thomomys bottae* 204-64-28-7 = 103 g.

4 mi. (by road) SE ~~Higiño~~ Migriño, 80 m., Baja California Sur, México.

14 July

skull only
876 ? *Cathartes aura* pick-up [no measurements]

Catalogue

Hafner, M.S.
1977

4 mi. SE (by road) Migriño, 90 m., Baja California Sur, México.

15 July

+ tissue, blood + reprod. tract	877	♂ Perognathus spinatus (testes = 9 mm, scrotal; SV = 8 mm.)	188-105-24-10 = 18 g.
+ tissue, blood	878	♂ Perognathus spinatus (testes = 9 mm, scrotal; SV = 7 mm.)	190-108-23-10 = 19 g.
+ tissue, blood	879	♂ Perognathus spinatus (testes = 8 mm; scrotal; SV = 8 mm.)	203-109-24-10 = 21 g.
+ tissue, blood	880	♀ Perognathus spinatus (vag. open; parous (?))	192-108-24-10 = 17 g.
+ tissue, blood	881	♀ Perognathus spinatus (vag. closed; scars: 5R-2L = very faint)	198-110-24-11 = 19.5 g.
+ tissue, blood	882	♀ Perognathus spinatus (vag. closed; null.)	190-107-24-11 = 15 g.
+ tissue, blood + reprod. tract + sperm	883	♂ Perognathus spinatus (testes = 9 mm, scrotal)	192-106-24-11 = [no wt.]

4 mi. N (by road) Migriño, 1 m., Baja California Sur, México.

15 July

skull only	884	Pelican	pick-up [no measurements]
skull only	885	Pelican	[" "]
skull only	886	(Least Tern)?	[" "]

14 July

7.4 mi. S (by road) Migriño, Baja California Sur, México.

Alcoholic + tissue	887	Horned Lizard (tissue in 2 tubes)	SV = 97 mm; wt. = 41 g.

Migriño, 10 m., Baja California Sur, México.

16 July

+ tissue, blood + chrom.	888	♀ Perognathus (vag. closed; emb: 1L-1R = 2 mm.)	155-82-21-9 = 12 g.
+ tissue, blood + chrom. + reprod. tract + sperm	889	♂ Perognathus (testes = 7 mm, scrotal; SV = 6 mm.)	177-95-22-10 = 14 g.

Catalogue

Hafner, M.S.
1977

6 km. N, 10 km. E Santiago, 60 m., Baja California Sur, México

16 July

+ tissue, blood, + chrom. — vag. closed; scars: 2R-2L
890 ♀ *Thomomys bottae* 209-62-28-7=80 g.

1 km. N Siqueros, 50 m., Sinaloa, México

19 July

+ tissue, Alcoholic — testes scrotal.
891 ♂ *Artibeus* 85-0-15-21=33.5 g.

+ tissue, skeleton only — testes scrotal = 6 mm; SV=2 mm.
892 ♂ *Perognathus* 177-100-22-9= 13.5 g.

+ tissue, skeleton only — vag. closed; null.
893 ♀ *Perognathus* 162-90-22-9= 12 g.

+ tissue, blood, + chrom.! sperm, + reprod. tract — testes 9 mm, scrotal. SV = 5 mm
894 ♂ *Perognathus* (sp.?) artus? 166-83-21-10 = [no wt.]

+ tissue, blood — vag. closed; old scars: 1R-2L, new scars: 1R-1L
895 ♀ *Perognathus* 173-93-23-10 = 16 g.

+ tissue, blood — vag. closed; null.
896 ♀ *Perognathus* 157-90-22-8 = 10 g.

+ tissue, blood, + reprod. tract, + sperm — testes = 8 mm, scrotal. SV = 7 mm.
897 ♂ *Perognathus* 172-89-22-10 = 17 g.

+ tissue, blood — vag. closed; emb: 2R-1L = 2.5 mm
898 ♀ *Perognathus* 168-93-23-10 = 12.5 g.

+ tissue, blood — testes = 7 mm; scrotal; SV = 4 mm
899 ♂ *Perognathus* 176-99-24-9 =13.5 g.

10 km. S, 2 km. W Sombrerete, 2130 m, Zacatecas, México.

21 July

+ tissue, blood — vag. closed; parous, uterus slightly swollen
900 ♀ *Thomomys umbrinus* 185-58-26-6=76 g.

+ tissue, blood — vag. closed, uterus swollen, parous
901 ♀ *Thomomys umbrinus* 193-65-26-7=81 g.

+ tissue, blood — vag. closed, uterus swollen, parous
902 ♀ *Thomomys umbrinus* 192-59-25-6= 86 g.

+ tissue, blood — vag. closed, uterus slightly swollen, parous
903 ♀ *Thomomys umbrinus* 184-55-26-6= 73 g.

Catalogue

Hafner, M.S.
1977

10 km. S, 2 km. W Sombrerete, 2130 m., Zacatecas, México.

22 July

+ tissue, No blood
skeleton
904 ♂ *Thomomys umbrinus* — testes = 12 mm, scrotal?, tub. visib. — 183-63-26-7 = 66+ g.

+ tissue, blood
905 ♀ *Thomomys umbrinus* — vag. closed; nulliparous — 184-62-25-6 = 69 g.

+ tissue, blood
906 ♂ *Thomomys umbrinus* — testes = 11 mm, scrotal; tub. visib. — 186-61-25-6 = 80 g.

+ tissue, blood
+ chrom.
907 ♂ *Thomomys umbrinus* — testes = 10 mm, scrotal; tub. visib. — 198-63-27-6 = [no wt.]

+ tissue, blood
908 ♂ *Thomomys umbrinus* — testes = 12 mm, scrotal, tub. visib. — 193-61-26-6 = 86 g.

3 km. N Ojocaliente, 2030 m., Zacatecas, México.

23 July

+ tissue, blood
skeleton
909 ♂ *Thomomys umbrinus* — testes = 6 mm, abdom. — 195-65-26-6 = 85 g.

+ tissue, blood
910 ♂ *Thomomys umbrinus* — testes = 9 mm, scrotal; tub. visib. — 208-67-28-7 = 118 g.

+ tissue, blood
911 ♀ *Thomomys umbrinus* — vag. closed; uterus swollen, emb: 2R-1L = 8 mm — 200-67-27-7 = 105 g.

+ tissue, blood
912 ♀ *Thomomys umbrinus* — vag. closed; uterus swollen (preg.) — 202-59-27-7 = 104 g.

+ tissue, blood
913 ♂ *Thomomys umbrinus* — testes = 7 mm; ½ abdom. — 216-69-30-7 = 122 g.

+ tissue, blood
914 ♂ *Thomomys umbrinus* — testes = 14 mm, scrotal; tub. visib. — 228-70-29-7 = 136 g.

+ tissue, blood
915 ♂ *Thomomys umbrinus* — testes = 13 mm, scrotal; tub. visib. — 223-72-29-7 = 135 g.

+ tissue, blood
916 ♀ *Thomomys umbrinus* — vag. closed; emb: 1R-1L = 12 mm. — 195-62-27-7 = 89 g.

+ tissue, blood
skeleton
917 ♀ *Thomomys umbrinus* — vag. closed; uterus slightly swollen. — 189-55-25-6 = 82 g.

+ tissue, blood
skeleton
918 ♂ *Thomomys umbrinus* — testes = 6 mm, abdom. — 188-54-26-6 = 73 g.

+ tissue, No blood
919 ♀ *Thomomys umbrinus* — vag. closed; no emb. no scars, parous — 199-57-27-7 = 89 g.

+ tissue, blood
920 ♀ *Thomomys umbrinus* — vag. closed; scars 2R-2L — 198-62-28-7 = ~~89~~ 95 g.

+ tissue, blood
+ chrom.
921 ♀ *Thomomys umbrinus* — vag. closed; nulliparous — 196-66-27-7 = 84 g.

Catalogue

Hafner, M.S.
1977

Ventura, 1680 m, San Luis Potosí, México.

25 July

+tissue, blood +chrom. — vag. closed; uterus slightly swollen, nulliparous
922 ♀ Thomomys umbrinus — 192-62-27-6 = 59 g.

+tissue, blood — vag. closed; uterus swollen; parous
923 ♀ Thomomys umbrinus — 194-66-24-6 = 86 g.

+tissue, blood — vag. closed; uterus swollen; parous
924 ♀ Thomomys umbrinus — 189-61-24-6 = 77 g.

+tissue, blood +chrom. — vag. closed; uterus swollen; null.
925 ♀ Thomomys umbrinus — 203-68-26-6 = 73 g.

26 July

+tissue, blood — testes = 15 mm, scrotal; tub. visib.
926 ♂ Thomomys umbrinus — 208-65-26-7 = 99 g.

+tissue, blood — vag. open, recent litter
927 ♀ Thomomys umbrinus — 199-62-26-7 = 91 g.

+tissue, blood — vag. closed; emb.: 1R-1L = 12 mm.; null.
928 ♀ Thomomys umbrinus — 193-65-25-6 = 78 g.

+tissue, blood — vag. closed.
929 ♀ Thomomys umbrinus — 190-61-24-6 = 77 g.

+tissue, blood — vag. closed; uterus slightly swollen; parous
930 ♀ Thomomys umbrinus — 189-59-25-6 = 83 g.

+tissue, blood — vag. open; emb. 1R-1L = 20 mm.
931 ♀ Thomomys umbrinus — 193-60-26-6 = 95 g.

+tissue, blood — vag. closed; uterus slightly swollen; null.
932 ♀ Thomomys umbrinus — 186-62-25-6 = 73 g.

11 km. N, 12 km. E Arriaga, 2030 m., San Luis Potosí, México.

26 July

+tissue, blood — vag. closed; parous
933 ♀ Thomomys umbrinus — 181-57-25-6 = 79 g.

6.5 km. S Pátzcuaro, 2200 m., Michoacán, México.

28 July

+tissue, blood +chrom. — vag. closed; parous
934 ♀ Thomomys umbrinus — 178-52-24-6 = 57 g.

+tissue, blood — vag. closed; null.
935 ♀ Thomomys umbrinus — 159-50-23-5 = 37.5 g.

+tissue, blood — vag. closed; null.
936 ♀ Thomomys umbrinus — 157-48-24-5 = 49 g.

+tissue, blood — vag. closed; null.
937 ♀ Thomomys umbrinus — 170-53-26-5 = 61 g.

+tissue, blood — vag. open; uterus swollen.
938 ♀ Thomomys umbrinus — 177-54-25-6 = 66 g.

+tissue, blood — vag. closed; uterus slightly swollen; null.
939 ♀ Thomomys umbrinus — 178-55-26-6 = 67.5 g.

Catalogue

Hafner, M.S.
1977

6.5 km. S Pátzcuaro, 2200 m., Michoacán, México.

28 July (cont)

+ tissue, blood — vag. closed; null.
940 ♀ *Thomomys umbrinus* 170-54-25-6 = 56 g.

+ tissue, blood — vag. closed; null.
941 ♀ *Thomomys umbrinus* 169-52-24-5 = 58 g.

+ tissue, blood — vag. closed; null.
942 ♀ *Thomomys umbrinus* 165-48-23-5 = 59 g.

+ tissue, blood + chrom. — vag. closed; uterus slightly swollen; parous — ca. 600 g.
943 ♀ *Pappogeomys gymnurus* 343-97-47-7 = [no wt.]

+ tissue, blood — testes = 7 mm.; abdom.
944 ♂ *Pappogeomys gymnurus* 262-82-41-7 = [no wt.]

10 mi. (by road) SW Nuevo San Juan, 2220 m., Michoacán, México.

30 July.

+ tissue, blood + chrom. — vag. open; uterus slightly swollen, parous
945 ♀ *Pappogeomys tylorhinus* 288-92-38-7 = 268 g.

6 km. N, 2 km. W Tancítaro, 2000 m., Michoacán, México.

1 August

...allus, + tissue, blood + chrom. — testes = 5 mm., abdom.
946 ♂ *Zygogeomys trichopus* 283-97-38-7 = 212 g.

...allus, + tissue, blood + chrom. — testes = 4 mm., abdom.
947 ♂ *Zygogeomys trichopus* 278-96-40-8 = 228 g.

10 km. S, 16 km. W Toluca, 3000 m., México, México.

3 August

+ tissue, blood — testes = 5 mm., abdom.
948 ♂ *Thomomys umbrinus* 191-65-26-6 = 77 g.

+ tissue, blood — vag. open; emb.: 1R-1L = 10 mm.
949 ♀ *Thomomys umbrinus* 215-69-28-7 = 128 g.

+ tissue, blood — vag. closed; null.
950 ♀ *Thomomys umbrinus* 195-66-28-6 = 81 g.

+ tissue, blood — testes = 7 mm.; abdom.
951 ♂ *Thomomys umbrinus* 191-58-28-6 = 83 g.

+ tissue, ~~blood~~ — vag. closed; emb: 1R-1L = 33 mm [tissue may be old]
952 ♀ *Thomomys umbrinus* 198-64-28-7 = 120 g.

+ tissue, blood — vag. closed; uterus swollen
953 ♀ *Thomomys umbrinus* 204-64-27-7 = 110 g.

+ tissue, blood — testes = 7 mm.; abdom.
954 ♂ *Thomomys umbrinus* 198-68-28-6 = 95 g.

+ tissue, blood — vag. open; emb.: 1R-1L = 4 mm.
955 ♀ *Thomomys umbrinus* 213-68-29-7 = 141 g.

Catalogue

Hafner, M.S.
1977

10 km. S, 16 km. W Toluca, 3000 m., México, México.

3 August (con't)

+ tissue, blood — vag. open; uterus swollen; nipple wear
956 ♀ *Thomomys umbrinus* 212-68-28-7 = 120 g.

+ tissue, blood — vag. closed; null.
957 ♀ *Thomomys umbrinus* 203-63-28-6 = 93 g.

5.5 km. S, 13 km. E Amecameca, 3680 m., México, México.

5 August

+ tissue, blood
+ chrom. — vag. open; parous
958 ♀ *Thomomys umbrinus* 233-72-31-8 = 119 g.

+ tissue, blood — vag. open; uterus slightly swollen; null.
959 ♀ *Thomomys umbrinus* 209-66-31-7 = 125 g.

+ tissue, blood — vag. closed; uterus slightly swollen; null.
960 ♀ *Thomomys umbrinus* 216-67-29-7 = 121 g.

+ tissue, blood — vag. open; uterus slightly swollen; parous
961 ♀ *Thomomys umbrinus* 223-71-31-7 = 140 g.

+ tissue, blood — vag. open; emb: 2R-1L = 14 mm.
962 ♀ *Thomomys umbrinus* 216-70-29-8 = 132 g.

+ tissue, blood — vag. closed; null.
963 ♀ *Thomomys umbrinus* 203-62-28-7 = 92 g.

6 August

+ tissue, blood — testes = 12 mm; scrotal; tub. visib.
964 ♂ *Thomomys umbrinus* 215-71-30-7 = 127 g.

+ tissue, blood — vag. closed; uterus swollen (flacid); parous
965 ♀ *Thomomys umbrinus* 222-76-29-7 = 129 g.

+ tissue, blood — vag. open; emb: 1R-2L = 2 mm, parous
966 ♀ *Thomomys umbrinus* 217-73-30-7 = 129 g.

Monte Albán, 1850 m., Oaxaca, México.

8 August

+ tissue, blood
+ chrom. — testes = 21 mm, scrotal; SV = 22 mm, tub. visib.
967 ♂ *Liomys irroratus* 258-143-30-17 = 52 g.

+ tissue, blood
+ reprod. tract
+ sperm — testes = 20 mm, scrotal, tub. visib.; SV = 10 mm.
968 ♂ *Liomys irroratus* 268-155-31-17 = 54.5 g.

+ tissue, blood
+ sperm
+ reprod. tract — testes = 22 mm; scrotal; tub. visib.; SV = 22 mm., swollen
969 ♂ *Liomys irroratus* 205-[72]-31-18 = 70.5 g.

skull only
970 (?) *Didelphis* pick-up [no measurements]

Catalogue

Hafner, M.S.
1977

Monte Albán, 1850 m., Oaxaca, México.

9 August

+tissue
vag. open, swollen; uterus swollen
971 ♀ *Liomys irroratus* 275-154-30-17=56g.

+tissue
testes=19mm; scrotal; SV=21mm; tub. visib.
972 ♂ *Liomys irroratus* 260-137-31-17=61g.

+tissue, blood
vag. closed; null.
973 ♀ *Liomys irroratus* 218-[92]-31-18=42g.

+tissue, blood
+chrom.
testes=6mm, ± scrotal; SV=8mm.
974 ♂ *Baiomys musculus* 132-~~56~~ 53-16-13=11.9g.

Boca del Monte, 3.5 km. S, 3 km. E Esperanza, 2450 m., Puebla, México.

13 August

+tissue, blood
vag. closed; lactating
975 ♀ *Thomomys umbrinus* 190-53-26-7=97g.

+tissue, blood
vag. closed; emb: 1R-1L=5mm.; null.
976 ♀ *Thomomys umbrinus* 189-55-27-7=93g.

+tissue, blood
vag. closed; null.
977 ♀ *Thomomys umbrinus* 178-54-26-6=[no wt.] ~~173-50-23-6=[no wt.]~~

+tissue, blood
vag. closed; null.
978 ♀ *Thomomys umbrinus* 173-50-23-6=[no wt.]

+tissue, blood
+chrom.
vag. open; null.
979 ♀ *Thomomys umbrinus* 187-53-26-6=71g.

14 August

+tissue, blood
vag. closed; uterus swollen; parous
980 ♀ *Thomomys umbrinus* 195-52-26-6=99g.

+tissue, blood
vag. open; lactating
981 ♀ *Thomomys umbrinus* 188-52-25-6=87g.

+tissue, blood
testes=11mm; scrotal; tub. visib.
982 ♂ *Thomomys umbrinus* 206-57-27-7=128g.

+tissue, blood
vag. closed; null.
983 ♀ *Thomomys umbrinus* 183-50-25-6=81g.

13 km. S, 1 km. W Llera, 450 m., Tamaulipas, México.

15 August

+tissue, blood
+chrom.
vag. closed; null.
984 ♀ *Heterogeomys* 320-85-45-9=565g.

(con't)

Catalogue

Hafner, M.S.
1977

12 mi. S Garrison, Millard Co., Utah.

Captured 23 March 1975 - Died June 1977

+ recordings 985 ♂ Onychomys leucogaster

2 mi. E Searles Station, 9 mi. NNE Johannesburg, San Bernardino Co., 3200 ft., California.

Captured 10 July 1976 - Died August 1976

+ recordings 986 Onychomys torridus

1 mi. S. of Kingman's Hilltop Area, Mohave Co., 3300 ft. Arizona.

Coll. 30 June 1976 - Died August 1976
[Coll. J.T. Mascarello]

+ recordings 987 Onychomys torridus

Catalogue

Hafner, M.S.
1978

6 km. N, 2 km. W Tancítaro, 2000 m., Michoacán, Mexico

22 March

\+ tissue / + skeleton 988 ♂ *Zygogeomys trichopus* (testes = 5 mm., abdom.) 302-105-45-8 = 282 g.

23 March

\+ blood/Tissue / Alcoholic 989 ♂ *Zygogeomys trichopus* (testes = 3 mm., abdom.) 270-97-42-7 = 188 g.

3.6 km. (by road) N Arteaga, Michoacán, México.

27 March

...ey + blood, tissue / ...) + skeleton / ... + ectoparasites / ...o.; + reprod. tract 990 ♂ *Orthogeomys* (testes = 14 mm., scrotal) 397-136-55-13 = 760 g.

6 km (by road) S Tacámbaro, Michoacán, México.

28 March

\+ blood, tissue / + skeleton 991 ♀ *Liomys pictus* (vag. closed, nulliparous) 210-99-27-18 = 33 g.

Butler, Taylor Co., Georgia.

17 June

\+ blood, tissue / skeleton 992 ♂ *Geomys pinetus* (juv. testes = 2.5 mm; abdom) 177-51-28-4 = 60 g.

4.5 mi. N, 3. mi. E Santa Rosa, Guadalupe Co., New Mexico.

19 June

\+ blood, tissue / skeleton 993 ♂ *Pappogeomys castanops* (testes = 7 mm. abdom.) 218-68-31-6 = 120 g.

\+ blood, tissue / skeleton + sperm 994 ♂ *Pappogeomys castanops* (testes = 7 mm, abdom.) 252-78-35-6 = 175 g.

\+ blood, tissue / skeleton 995 ♂ *Pappogeomys castanops* (testes = 6 mm., abdom.) 236-76-34-6 = 150 g.

19 June (con't)
over

Catalogue

Hafner, M.S.
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7.5 mi. N, 1 mi. E Santa Rosa, Guadalupe Co., New Mexico.

19 June (con't)

+ blood, tissue skeleton 996 ♀ Pappogeomys castanops — vag. open; emb. 2R-0L = 8 mm CR. — 282-80-39-7 = 305 g.

2 km. NE Cartago, Cartago Prov., Costa Rica.

7 July

+tissue +skeleton 997 ♀ Oryzomys fulvescens — vag. closed; emb. 2R-2L = 5 mm. — 174-102-21-12 = 9 g.

+tissue +skeleton 998 ♀ Reithrodontomys — vag. open; emb. 1L (resorbed); scars: 1 R. — 183-105-20-16 = 11 g.

+tissue +skeleton 999 ♀ Reithrodontomys — vag. open; null. — 182-104-19-16 = 13 g.

+tissue +skeleton 1000 ♂ Oryzomys fulvescens — testes = 4 mm; scrotal — 178-104-22-14 = 12 g.

+tissue +skeleton 1001 ♂ Peromyscus (mexicanus?) — testes = 16 mm; scrotal; tub. visib. — 229-120-27-19 = 34 g.

+tissue +skeleton 1002 ♂ Peromyscus (mexicanus?) — testes = 16 mm; scrotal; tub. visib. — 238-121-27-19 = 40 g.

1 km. S Tres Rios, Cartago Prov., Costa Rica.

9 July

279-151-34-16=63.5 g.

+blood, tissue +skeleton +chromo. 1003 ♀ Heteromys (desmarestianus?) — vag. closed; emb. = 1R-2L (1 resorbed) = 19 mm. — 279-151-34-16=63.5 g.

+ tissue +skeleton 1004 ♂ Scotinomys teguina — testes = 4 mm; abdom. — 128-56-17-14 = 11 g.

1 km. W Santa Rosa, Cartago Prov., Costa Rica

9 July

eprod. tract / perm / idney / n alc. — +blood, tissue +skeleton +chromo. 1005 ♂ Macrogeomys heterodus — testes = 18 mm; scrotal; tub. visib. — 367-103-48-9 = 700 g.

perm — +blood, tissue carcass in alc. kidney in alc. 1006 ♂/♀ Macrogeomys heterodus — testes = 16 mm; scrotal; tub. visib. — 312-85-46-9 = 455 g.

Albala Lake, Lake Co., Oregon.

2 September

Alcoholic + tissue 1007 Onychomys leucogaster [in captivity until April 1979] — coll. by J. C. Hafner — 151-42-21-19 = [no wt.]

Alcoholic + tissue 1008 Onychomys leucogaster ["] — coll. by J.C. Hafner — 144-40-20-19 = 37 g.

Catalogue

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13 mi. S Contact, Elko Co., Nevada.

10 September 1978

Alcoholic + tissue 1009 *Onychomys leucogaster* (in captivity until April 1979) 140-41-20-18=28g.

5 mi. W Halleck, Elko Co., Nevada.

10 September

~~1010~~
Alcoholic + tissue 1010 *Onychomys leucogaster* (in captivity until April 1979) 147-39-20-20=37g.

11 September

Alcoholic + tissue 1011 *Onychomys leucogaster* (in captivity until April 1979) 136-35-20-19=28g.

Catalogue

Hafner, M.S.
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1 km N Bella Unión, Coahuila, México.

29 June

+ blood, tissue / testes = 5 mm, abdom.
+ skeleton 1012 ♂ Thomomys 197-61-28-7 = 80 grams
+ blood, tissue / vag. closed; uterus slightly swollen; null.
+ skeleton 1013 ♀ Thomomys 198-63-27-8 = 82 grams
+ blood, tissue / testes = 4 mm., abdom.
+ skeleton 1014 ♂ Thomomys 215-69-28-8 = 100 grams
+ blood, tissue / vag. closed; null.
+ skeleton 1015 ♀ Thomomys 197-61-27-8 = 86 grams
+ blood, tissue / vag. closed; uterus swollen; null.
+ skeleton
+ chromo. 1016 ♀ Thomomys 204-63-24-7 = 72 grams

30 June

+ blood, tissue / vag. closed; emb: 1R-1L = 19 mm.
+ skeleton 1017 ♀ Thomomys 204-62-27-8 = 110 grams
+ blood, tissue / testes = 3 mm; abdom.
+ skeleton 1018 ♂ Thomomys 166-53-25-7 = 49 grams

1 July

+ blood, tissue / vag. closed; null
+ skeleton
~~+ chromo.~~ 1019 ♀ Thomomys 195-61-26-7 = 85 grams
+ blood, tissue / vag. closed; parous
+ skeleton
+ chromo. 1020 ♀ Thomomys 199-63-26-7 = 82 grams

1 July

skeleton only / testes = 4 mm; abdom.
1021 ♂ Pappogeomys 213-66-30-6 = 115 g.
skeleton only / vag. closed; uterus slightly swollen; parous
1022 ♀ Pappogeomys 230-71-30-6 = 150 g.

1 km N Siqueros, 50 m, Sinaloa, México

3 July

vag. closed; null.
1023 ♀ Thomomys 212-69-28-7 = 100 g.

4 July

+ blood, tissue / vag. closed; null, uterus slightly swollen
+ skeleton 1024 ♀ Thomomys 209-66-29-8 = 110 g.
+ blood, tissue / testes = 3 mm; abdom.
+ skeleton 1025 ♂ Thomomys 201-63-26-7 = 81 g.
+ blood, tissue / vag. closed; uterus slightly swollen; null.
+ skeleton 1026 ♀ Thomomys 200-[61]-26-7 = 100 g.

Catalogue

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1 km N Siqueros, 50 m, Sinaloa, México.

5 July

+ blood, tissue + skeleton 1027	vag. closed, parous ♀ Thomomys	220-70-29-7 = 110 g.
+ blood, tissue + skeleton 1028	testes = 5 mm, scrotal ♂ Thomomys	234-76-30-8 = 148 g.

Hafner, M. S.

Journal

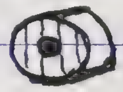
1976

Calif.
Nevada
Texas
New Mexico

Journal

Hafner, M.S.
1976

Concord, Contra Costa Co., 400 ft., California

1 January Dave Hafner, Ken Ramey, and I returned to indian midden site. We sifted and dug all day — but weren't too successful. We found the dentary (only half) of a cricetid (probably Reithrodontomys), part of a human dentary with very worn molars, and 4 beads. The beads were remarkably ~~to~~ well made: actual size.  (made of bone) We, again, picked-up many bone fragments for later identification. 1700 returned home.

Mt. Diablo, 2 mi. SE Clayton, Contra Costa Co., California

January Dave Hafner, Barry Lotz and I departed Richmond 0700 heading for Mt. Diablo. 0830 Parked car and began hike. 0930 reached Eagle Peak — Stratocumulus overcast — ~45°F; light breeze. 1000 noted Prairie Falcon perched on Tree on East slope of Eagle Peak — could see droppings on rocks nearby (presumed to be Falcon's nest) but could not get within view of nest — due to ruggedness of country.

1230 arrived Summit of Mt. Diablo. Very Cold — rather hard climb — ~~view~~ not too good. Had lunch and coffee at snack bar.

1330 — crossed down through saddle and arrived on North Peak 1415. Rested for awhile, then began decent on west face of North Peak.

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Mt. Diablo, ca. 2 mi. SE Clayton, Contra Costa Co., California

January (con't) Decent was very difficult through steep canyon covered with patches of pines and alternating chapparal. About halfway down I found a Gray Fox (Urocyon) carcass – collected baculum and skull. Fox was recently killed and was lying in a crevass between large boulders. 1600 arrived at base of mountain. 1700 arrived automobile. Beautiful Hike – we were all rather sore, however. We stopped for a couple of beers at the saloon in Clayton, then returned home.

9 mi. E, 5 mi. N Dos Palos, Merced Co., California.

30 January 0800 Departed Richmond heading for Fresno via Walnut Creek, Los Baños (I-5). I am to meet with Howard Leach (Calif. Fish & Game) to survey Land Use maps of the Dept. of Water & Power in Fresno. At this time also, the Wildlife & Fisheries Societies are meeting in Fresno – Howard is the moderator for one of the discussions and I'll have to catch him between meetings. It was a beautiful day to drive to Fresno. We noted many Ground squirrels (S. beecheyi) along I-5 and at least 10-12 Road-killed Barn Owls (Tyto). We turned E on the Los Baños Cutoff and found a road-kill coyote (C. latrans) at the above locality.

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9 mi. E, 5 mi. N Dos Palos, Merced Co., California

0 January (con't) The Coyote was very fresh — I took measurements, skull and reproductive data. A bit further along the road we found another dead Coyote. (This was too old to collect.). 1300 arrived Fresno, checked into "Motel 6" ($12.50) and I met with Howard Leach at the Fresno Hilton. We decided not to go to the D.W.R. but instead he would have a map to current Land-Use for me to pick up tomorrow (Sat.) morning. We met with Donna Knapp who was working for the Fish and Game and would take the airplane flight with us 20 February to survey the study area from the air.

Darcey, Emily and I had an enjoyable evening.

31 January Fresno, Fresno Co., California.

0900 met again with Howard Leach. 1100 left Fresno drove via Los Baños and Pacheco Pass to San Jose. (I was very impressed with the size of the reservoir near ~~on~~ Pacheco Pass.) We attended a wedding reception for Darcey's cousin, Diane, the drove home via Pleasant Hill. The weather has been unseasonably warm and clear. 2000 arrived home in Richmond.

Journal

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Fresno, Fresno Co., California

20 February 0600 left Pleasant Hill — forgot maps, so had to return — only lost about 15 minutes. Drove via Hwy 680 and Hwy 152 to Hwy 99, then to Fresno. 0915 arrived Fresno airport. 0930 met with Donna Knapp of Cal. Fish and Game. Went to main control tower where we met with Howard Leach and the pilot ("Bob").

1000 Departed Fresno in Fish and Game airplane. Very clear day — some low, scattered clouds — mainly in S.E. of Valley (near Bakersfield). We flew SW over to the Kern Wildlife refuge then S to the Buttonwillow area — looked at the Kern River wash area then over Bakersfield and up to Porterville — We are in search of areas of "Natural Habitat" that may contain Kit-Foxes and Dipodomys. We had lunch in Porterville, then flew back to Fresno.

1330 I left Fresno (by car), drove S on 99 to Pixley, then west and south ~10 miles. (see exact locality later). I set 50 sherman traps on Pixley Wildlife Refuge land — some rodent burrows (Dipo? or Ammo?) mostly low grass with few open sandy areas. Recent rains made ground rather hard-pack. Very few perennials — mainly a few low, scattered Suaeda fruticosa. SEE PHOTO.

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1976

20 February (cont) Vicinity S of Fresno, Fresno Co., California

1500 Drove S on Hwy 43 to the Tulare-Kern Co Line, where I set 50 traps along a fence running E from the road. Set traps at interface between the brush along the fence and the open field adjacent. The field was natural habitat - but full of puddles. Ground was hard-pack mainly due to recent rains. Fairly dense Suaeda fruticosa along fence (about 0.7 meters tall). Some Atriplex (polycarpa) and very few Haplopappus (?) . I continued S on Hwy 46 then turned W on the road to Kern Wildlife Refuge. Stopped at a patch of natural habitat on the S side of the road and again set 50 shermans. Only shrub is ~~plant~~ Atriplex polycarpa about 0.5 - 1 meter tall and averaging about 8 meters spacing. Occasional patches of "lawn-like" annual grasses. - few open spaces with mainly Spermophilus beecheyi diggings. Some apparent Dipodomys holes. I continued W on the road to the Wildlife Refuge then turned S on the Hwy bordered the refuge (to the E.). I set 50 traps just S of the Refuge in an area dominated by Salicornia (subterminalis ?) 0.5 - 1.2 meters tall, about 5 M average spacing. A continual "lawn" of low grasses covered substrate. There were occasional Salsola iberica .

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Vicinity S of Fresno, Fresno Co., California

February (con't) 1830 Finished setting traps and drove back into Delano to get gas and call Darcey. 2000 returned to the site S. of the Kern Wildlife Refuge to camp. It was a beautiful day. ~70°F, clear. The night was very frosty and ~32°F low; no wind.

Vicinity S. of Fresno, Fresno Co., California

February 0700 arose and checked all four ~~fo~~ localities with following results: (localities listed by order of setting (see map))

(1) Road 88, 3.5 mi. S, 5 mi. W Pixley, Tulare Co., 274 ft., California

1 *Dipodomys nitratoides*

(2) Tulare-Kern Co. lines, 6 mi. W Delano, Kern Co., California, 250 ft.

2 *Dipodomys nitratoides* (1 dead in trap)

1 *Peromyscus maniculatus*

(3) 1 mi. S, 5.4 mi. W Delano, Kern Co, California 250 ft.

2 *Dipodomys nitratoides*

4 *P. maniculatus* (2 juv., 2 ad.)

1 *Canis* ~~latrans~~ familiaris (~~skull &~~ skeleton baculum)

1 " latrans (~~skeleton~~ skull & baculum.)

(4) 6.3 mi. E, 7.0 mi. N Lost Hills, Kern Co. California. 274'

no captures

(see map)

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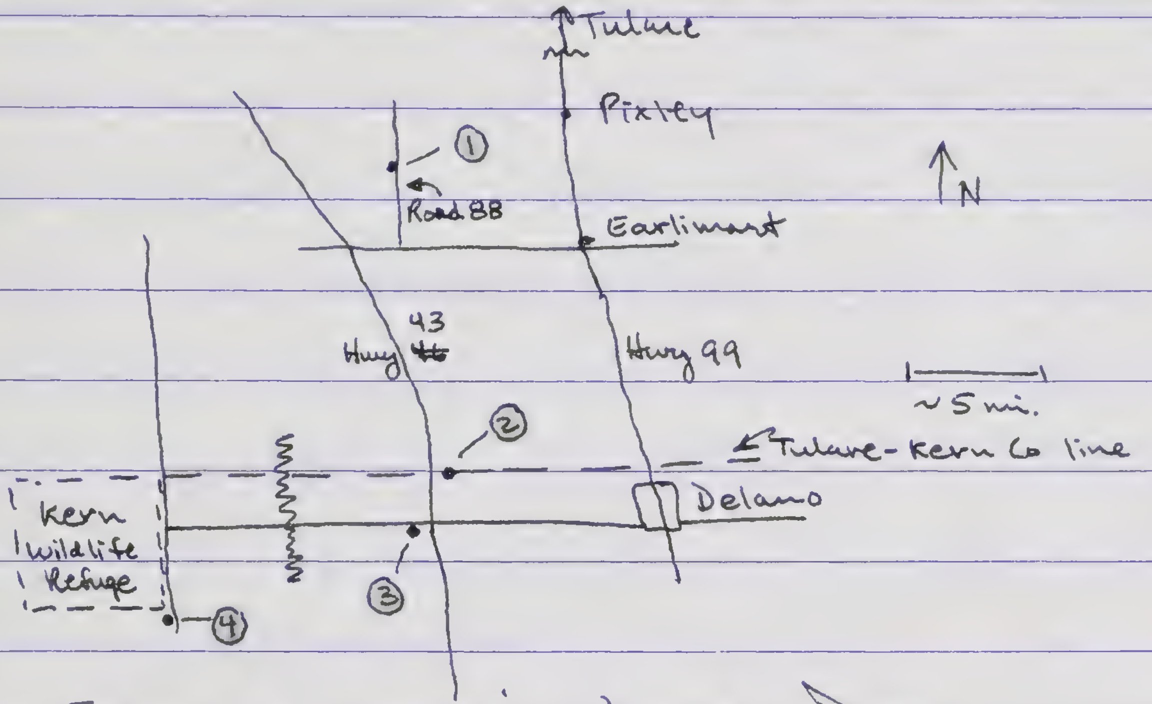
Vicinity S. of Fresno, Fresno Co., California

February (con't) Map of localities:



1100 Finished collecting traps. Drove back to Hwy 99 and headed S toward Bakersfield. Turned E on Hwy 46 then S on Hwy 65. Set 50 traps in dry wash just about 1 mi. N. of Poso Creek. Habitat was mainly med.-tall grasses with sparse thornbushes (tumbleweeds). Much Squirrel activity (Spermophilus). Continued S on 65 then through Oildale to a point 4 miles east. (just south of the Kern River) Set 50 traps on sloping hillside adjacent to oil well field. Little annual vegetation, much evidence of wash; Very dense Atriplex polycarpa. I continued on the road toward the Kern River State park, drove through the park, then headed south on Comanche Road. I then turned E on Edison Hwy and drove further E on Caliente Road. The area of natural habitat at the bottom of Caliente

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1 February (con't) Vicinity S and E of Bakersfield, Kern Co, Calif.
Creek Wash where Dave, Diane, Darcey and I trapped a year or so ago is no longer natural habitat but a farmers field. I drove further NE up Caliente Creek Wash and found an area of natural habitat just beyond the railroad tressel N of the road. Set 50 traps in gravelly sand in vegetation almost entirely composed of Lepidospartum squamatum up to 1.5 M tall. (5-8 m apart).
1600 Drove back to Hwy 58 then further S on Comanche Road to a point beyond Comanche Point. I tried to find natural habitat to the East, but saw none. Returned to Hwy 99 and set traps in a section of natural Habitat near the Herring Rd. turnoff (West of the Hwy.). Vegetation was fairly dense ~~Plant~~ Salicornia (subterminalis) 0.5-1.5 meters tall, 1.5 m apart, with some few Atriplex lentiformis. Very little annual vegetation on substrate (and soil was hard-pack and puddled from recent rains).
1730 Drove into Bakersfield and had dinner with Donna and Rich from Fish and Game. Called Darcey and 1900 returned to the last locality. Slept the night near the Herring Rd. offramp (Hwy 99).

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Vicinity S and E of Bakersfield, Kern Co., California

February 0700 arose. Very windy night — not too cold (~40°F).
Checked traps with following results:
(localities listed by order of setting)

① In dry wash, 6.3 mi. E, 2.5 mi. S Famoso, Kern Co, California, 600 ft.

5 *Peromyscus maniculatus*

saw: 1 Roadrunner cross Hwy 46. (W → E)

② Kern River, 4.0 mi. E Oildale, Kern Co, California, ~~60~~ 500 ft.

— no captures —

③ Caliente Creek Wash, 8.3 mi. E, 1.4 mi. S Edison, Kern Co, California 1,000 ft.

8 *Peromyscus maniculatus*
4 *Dipodomys heermanni*

Each of 2 traps had 2 Peromyscus inside. (ad. & juv.)

④ 5.2 mi. ~~S~~ N, 1.5 mi. W Mettler, Kern Co., California 300 ft.

13 *P. maniculatus*
~~2~~ 1 *Dipodomys heermanni*
1 *D. nitratoides*

1200 left last locality and drove north on Hwy 99 via Fresno, Hwy 152, 580 and 680 to Pleasant Hill. Brought back 10 live and 1 dead Dipo. for study. Very successful trip.

see map

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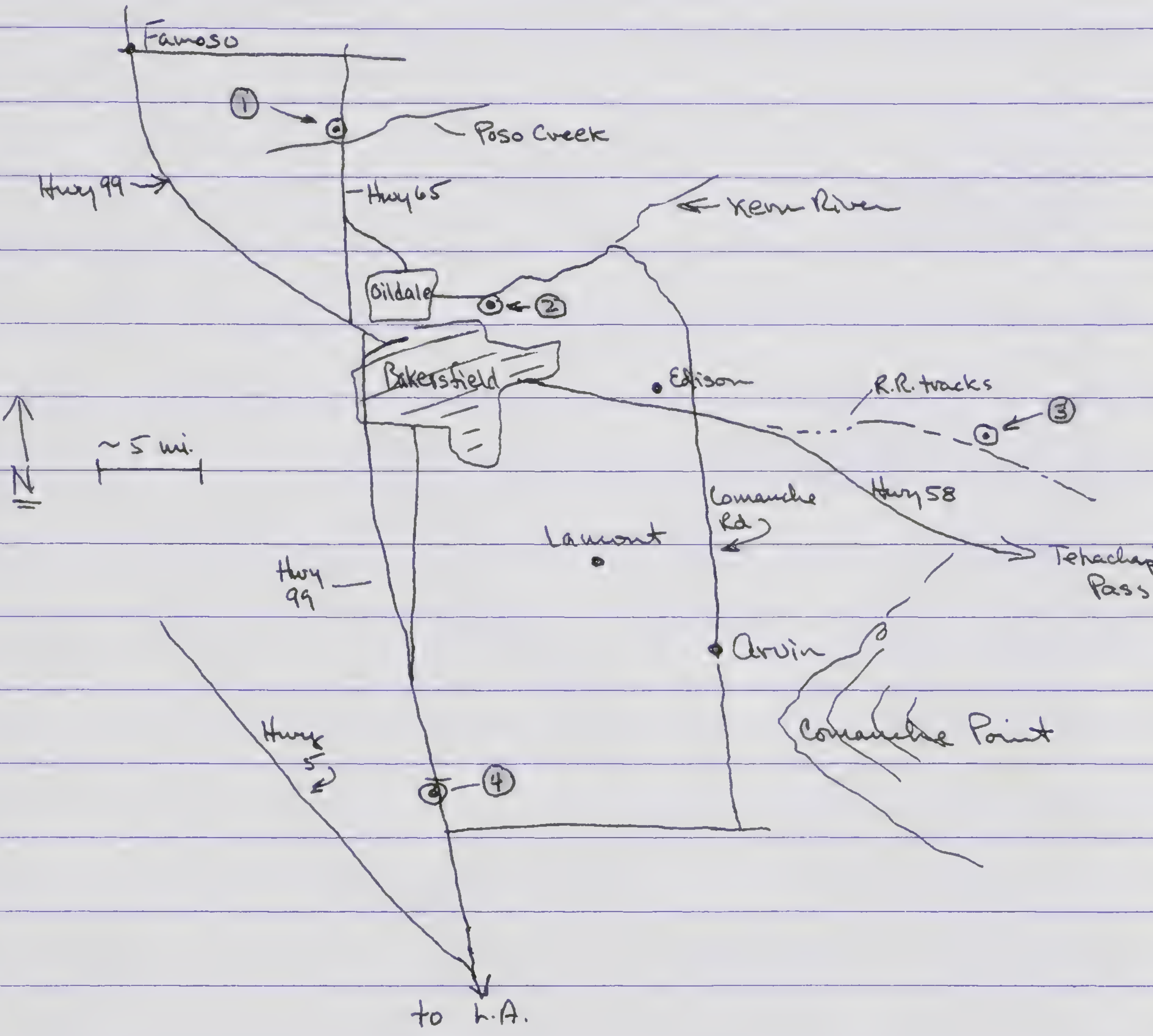
February cont

Vicinity S and E of Bakersfield, Kern Co., California

MAP OF LOCALITIES:



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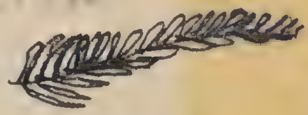
A. *Salicornia* leaves tightly "stacked" along branch
(probably S. subterminalis Parish)

B. *Salsola iberica* Sennen & Pau. "tumbleweed"
(Note: Called S. *kali* in many references) spiny

C. *Atriplex polycarpa* – many small leaves

D. *Suaeda fruticosa* (L.) Forsk
many small leaves – often purple 

E. ?*Haplopappus acradenius* (Greene) Blake
similar to *Chrysothamnus* [illegible]

F. *Atriplex lentiformis* – often long, broad leaves present

G. *Lepidospartum squamatum* (A. Gray) A. Gray long, thin leaves pressed close to stems

H.) *Hymenoclea salsola* – long, thin, leaves (look like *Artemisia calif.*)
flowers in clusters – small, white.

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Hafner, D.S.
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23 March Barron and I departed Richmond 0645. Drove via Sacramento, Truckee, Reno to a point 5.6 mi N. Sparks, Nevada. 1100 set out 60 traps (Sherman) in *Artemisia tridentata* community to NW of Hwy 33 (just off the road) at a point 5.6 mi. N. of Sparks. The *Artemisia* were fairly dense, spaced 1-2 M and approx. .7 - 1.0 M tall. There were a few *Chrysothamnus* and very few *Juniperus*. Loose, medium-fine sandy soil - overladen with light gravel. Much rodent evidence and active ant-hills. I found a Coyote (*Canis latrans*) skull. 1200 drove further NE on Hwy 33 just past the "Rifle-range" and turned ~~NW~~ NE on a dirt road heading toward Pond Peak. Stopped at a point 3 mi E, 7 mi. N Sparks and set out 70 live traps in *Artemisia tridentata* community. Again, there were a few *Chrysothamnus* (no junipers). The substrate was loose, fine powder. Ants were active. Weather was partly cloudy with ~~the~~ fairly strong winds from the NW. (~60°F).

1230 departed this locality and drove back to Sparks then via US 395 North to California Hwy 70. Drove over Beckwourth Pass (5212 ft.) to the vicinity of the Chilcoot, California cemetery. Set 60 live traps in fine, powdery, sand just N of the cemetery. *Artemisia tridentata* community with spaced *Chrysothamnus*. *Artemisia* spaced approximately 2-3 M. Drove further on Hwy 70 to Chilcoot.

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March (con't)

1.5 mi. N Chilcoot, 5000 ft., Plumas Co., California
Turned north on road to Frenchman Lake and Drove 1.5 mi. to a locality of loose, fine, wind-blown sand to the immediate E of the road. Set 70 live traps in mixed Artemisia tridentata and Chrysothamnus. (Artemisia approx. 1.3 M tall = fairly dense vegetation). Much evidence of Heteromyid activity. Barron and I then went further up the road toward Frenchman Lake - I had planned to camp in the wooded area about 6 mi N of Chilcoot. We walked around for awhile in the Conifer forest, then drove back to Hwy 70 and turned West toward Vinton. 1600-1700 hunted in the rocky slopes NE of the Vinton Cemetery (for Sylvilagus) - got none - saw 2). 1530 returned to camp on a side road about 1 mi. N. Chilcoot. 1900 - cold, windy evening. clear. Slept out.

March

1.5 mi. N. Chilcoot, 5000 ft. [5120], Plumas Co., California
0500 awoke cold. Drove to check traps.

Results:

1.5 mi. N Chilcoot, 5000 ft., Plumas Co., California

8 Peromyscus maniculatus
2 Reithrodontomys megalotis
2 Dipodomys panamintinus leucogenys
1 Dipodomys ordii
2 Microdipodops megacephalus californicus

0.1 mi. N Chilcoot Cemetery, 0.8 mi. E Chilcoot, Plumas Co., 5100 ft., California

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0.1 mi. N Chilcoot Cemetery, 0.8 mi. E Chilcoot, Plumas Co., 5100 ft., California

4 March (con't) Results : 6 *Peromyscus maniculatus* (1 obviously pregnant)
2 *D. panamintinus leucogenys* (" " ")

0700 Left california to check localities in Nevada.

Results :

5.6 mi. N Sparks, 4600 ft., Washoe Co, Nevada.

6 *D. panamintinus*
3 *P. maniculatus*
3 *Ammospermophilus leucurus* [given live to DJH]
1 *D. merriami*
1 *D. ordii*
1 *Eutamias minimus*
1 *Perognathus parvus.*

3 mi. E, 7 mi. N Sparks, 4500 ft. Washoe Co., Nevada

5 *D. panamintinus*
1 *D. merriami*
3 *Microdipodops megacephalus*
2 *P. maniculatus*
2 *Eutamias minimus*

Total capture success: 52/260 traps = 20%. Micros: 5/260 = 1.9%

Saved all but the *Peromyscus* for tissue samples. Saved the *Micros* for JCH. — this particular race of *megacephalus* (= *californicus*) was the reason for my trapping at these 4 localities. 0900 gassed-up in Sparks and headed

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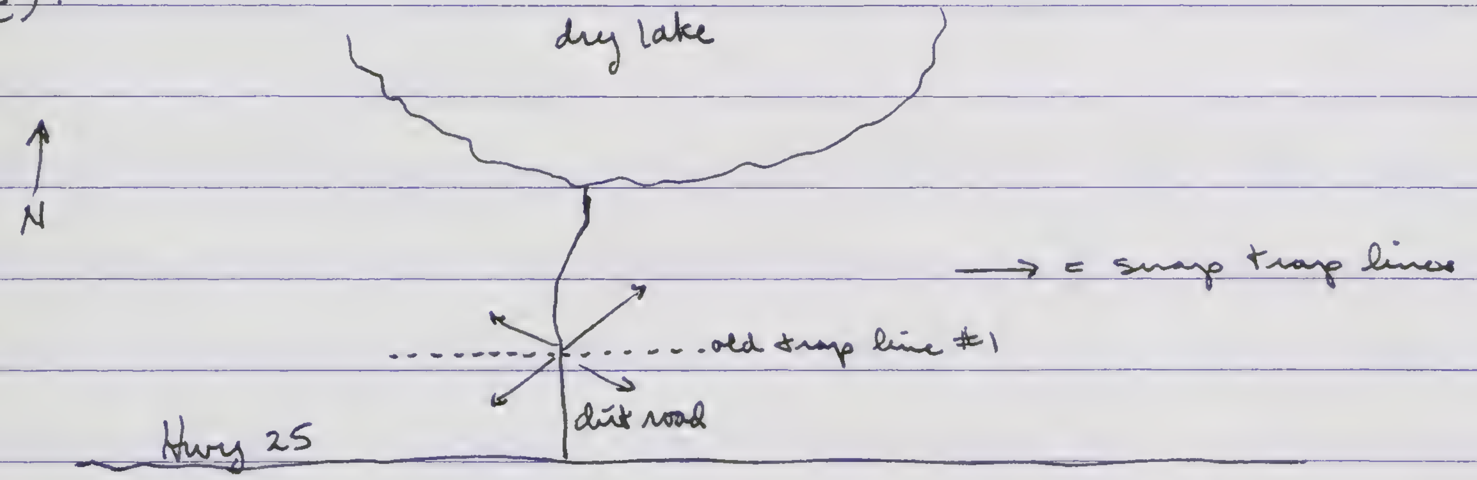
6 mi. N., 31 mi. W Hiko, Lincoln Co., 4800 ft., Nevada.

March (con't) E on I-80 then SE on Alt. 95 to Fallon, Nevada. Turned S on 95, passed Walker Lake, via Hawthorne to Tonopah. Called home in Hawthorne (all OK). Very windy and dusty. Partly cloudy. Continued E from Tonopah on Hwy 6 to Warm springs - gassed-up then headed SE to Sand Springs (= Penoyer) Valley. (see locality above). 1430 met Dave and Diane Hafner who had just arrived from an unsuccessful night's trapping in Utah. (didn't catch any Micro's). (Sky Clear now; strong wind from SW; ~60°F). Since we wanted stomach contents for analysis, we set out snap traps this night only: We set out 400 traps in 4 lines eminating from the "old line #1" (see 25 March 1975).



1700 set up camp in rocks just N. of Hwy 25 on Queen City Summit. (5960'). We set out 4 gopher sets on the summit. Dave and I put-up animals (1st outside and later in the tent) while Diane drove into Ash Springs (= 120 mi. round trip) for unleaded gas for their truck. 2130 ate dinner, talked and crashed. Cold, Clear, breezy night. Low temperature approximately 29° F.

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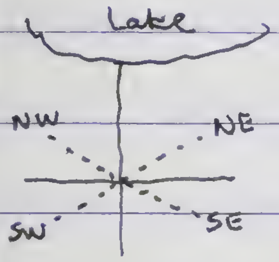
6 mi. N, 31 mi. W Hiko, 4800 ft., Lincoln Co., Nevada.

March 0500 arose, had coffee and drove to check traps. Caught 2 gophers (Thomomys bottae) on Queen City Summit. (Nye Co.)

Snap trap results:



NW set: 1 Microdipodops megacephalus

NE set: 3 M. pallidus

3 D. microps

1 Onychomys sp.

~~NW~~ SW set: 7 M. pallidus

2 M. megacephalus

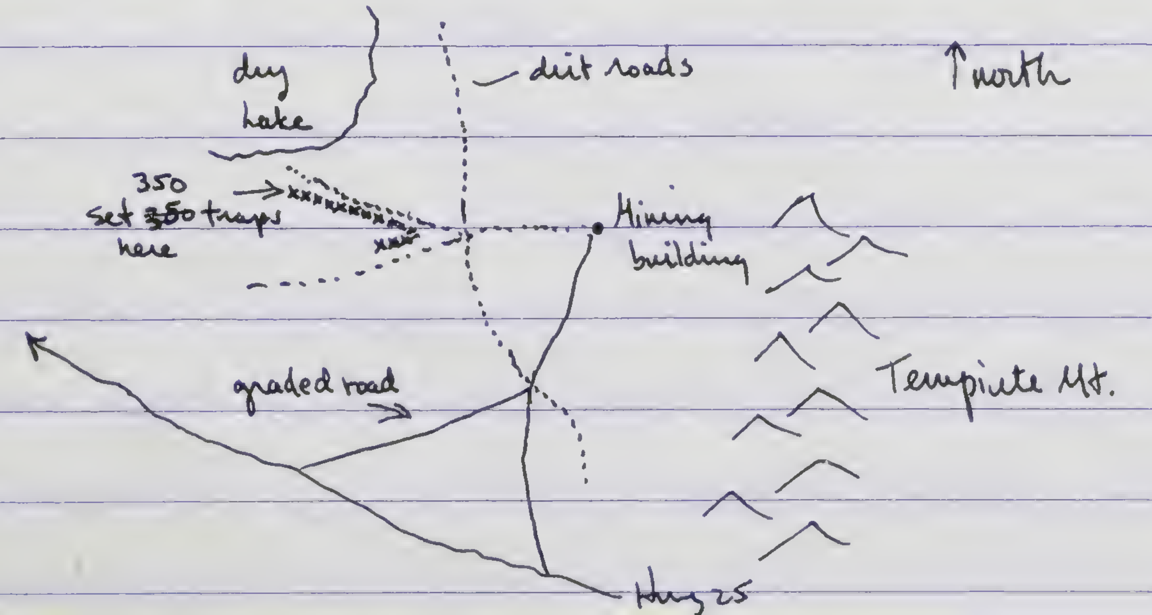
1 D. merriami

1 Onychomys sp.

SE set: 1 D. merriami

Total snap trap success: 20/400 = 5%   Micro. success = 13/400 = 3.2%

1000 set snap traps again on old line #1 extending East and west from dirt road. (400 traps). Drove to the Tempiute (=Lincoln) Mining Building in search of a road to the lake from the SE side. Found a road that approached the lake (See map.).



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6 mi. N. 31 mi. W. Hiko, 4800 ft. Lincoln Co., Nevada.

5 March (con't) Found very large Sceloperous magister near ruins by trap set. Set out 350 live traps. 250 parallel to dirt road and 100 heading S from ~~junction~~ junction of dirt roads (see map.) Very windy now with clouds of dust over lake. 1500 returned to camp and put up animals until about 2100. Clear, cold night, calm. Moon rose about 0200, Low temp. ~ 15-20°F.

6 March 6 mi. N., 31 mi. W. Hiko, 4800 ft., Lincoln Co. Nevada.

0500 arose and checked traps:

Snap traps: West line: 1 D. microps
2 M. pallidus
East line: 1 D. microps
2 M. megacephalus

Live traps:

Locality = 6 mi. N, 27 mi. W Hiko, 4800 ft. Lincoln Co., Nevada

5 P. maniculatus (3 let go)
4 D. microps
2 D. ordii
5 M. pallidus
1 A. leucurus
1 Onychomys sp.

4 of the 5 Micro's were caught near the dunes at the extreme East of the dirt road (not close to the lake). The vegetation consisted of Atriplex, Chryso., Tetradymia, and Sarcobatus — fairly sparce. Fine, wind-blown sand.

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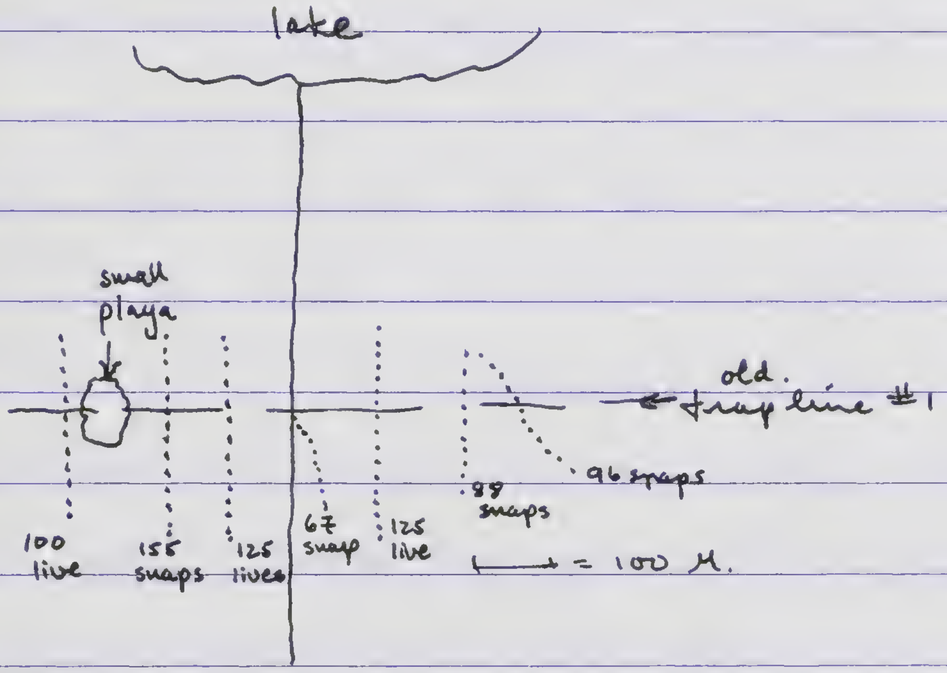
March
ont)

6 mi. N, 31 mi. W. Hiko, 4800 ft., Lincoln Co., Nevada.

Trapping Success: 24/750 = 3.2 %   Micro's: 9/750 = 1.2 %

1200 Returned (from Tempiute mining building) to original locality (above). Set out 3 MacAbee Gopher sets near Hwy 25 just of the dirt road to the lake and 5 live gopher sets at intervals along the dirt road between Hwy 25 and old trap line #1. Set out snap and live traps along old trap line #1 as below:



Total traps = 756

1400 Took vegetational density measures at random points on the East and West sides of the dirt road at each of the 3 old trap lines (see 25 March 1975). Collected plant samples. Warm day, somewhat windy, Clear.

1500 - Checked gopher sets in Valley: 1 *Thomomys bottae*. Returned to camp and put-up skins until 2200. 2300 slept.

March

6 mi. N., 31 mi. W Hiko, 4800 ft., Lincoln Co., Nevada.

0400 awoke to light, frozen rain. Arose and broke camp.

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6 mi. N., 31 mi. W Hiko, 4800 ft., Lincoln Co., Nevada.

7 March (con't) Rain was short lived, but overcast continued so we departed camp to check trap. Very Cold and overcast.

Results: 7 M. pallidus (1 returned live to JCH)
~~7~~ 5 M. megacephalus
8 D. microps
1 P. longimembris
1 P. maniculatus
1 Onychomys sp.

Success: 23/756 = 3.0% Micro's = 12/756 = 1.6%

Diane departed for Ash Springs to get more fuel for their truck. Dave and I checked gopher sets:

2 Thomomys bottae (live).

Dave and I skinned (skel. only) animals captured today until about 1100 when Diane returned. We transferred all Micro. tissue (from last year) into proper tubes and put ~~them~~ in liquid Nitrogen.

1130 departed locality, headed west on Hwy 25 via Warm Springs, and Hwy 6 to a locality 10 mi. E, 15 mi. N Warm Springs, 6000 ft. Nye Co., Nevada. It was snowing in areas near us and light snow fell on us as we approached Sandy Summit (6,037 ft). 1500 we set out 2 gopher sets in sandy wash about 100 M. S of road. Made camp near Highway 6. The habitat was heterogeneous with mostly dominant Artemisia tridentata and sparse Chrysothamnus

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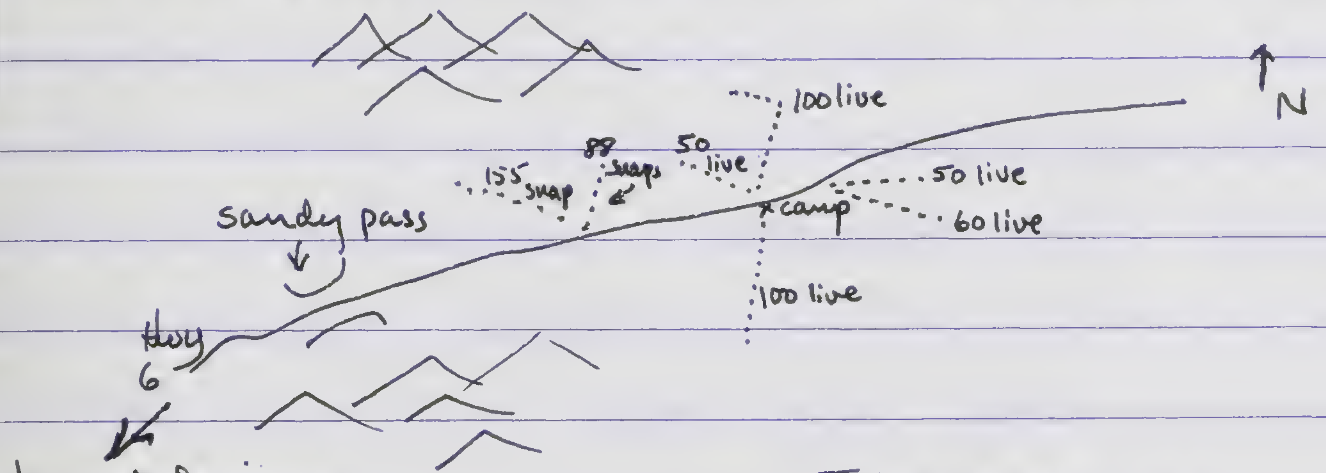
10 mi. E, 15 mi. N Warm Springs, 6000 ft., Nye Co., Nevada.

27 March (Con't) and Tetradymia; there were however occasional large patches of pure ~~Art~~ Chryso. and Tetra. with few or no Artemisia. In these patches, we noticed much Dipodomys and Thomomys evidence. The Artemisia community was quite dense (~0.7M tall). Soil in both areas was fine, powdery sand (actually more "dirt" than "sand")

Set out snaps and live traps as below:



Total traps = 603

Very threatening weather - light to moderate breeze now from the SE. Overcast and cold night.

28 March 10 mi. E, 15 mi. N Warm Springs, 6000 ft., Nye Co., Nevada.

0500 arose to check traps. Much dew had settled during the night - no rain or snow.

Results: S side of road: ~~1~~5 P. maniculatus
Live traps
2 P. longimembris
2 M. megacephalus (captured in almost pure Artemisia)
1 M. pallidus (captured in Chryso.)
1 D. ordii (" " ")

N. side of road: 1 M. megacephalus
2 M. pallidus

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10 mi. E, 15 mi. N. Warm Springs, 6000 ft., Nye Co., Nevada

8 March (con't) Results: (con't) 5 P. maniculatus

2 D. ordii

Snap traps: 2 M. megacephalus

3 P. longimembris

8 P. maniculatus

1 R. megalotis

Success: 35/603 = 5.8 % Micro's = 8/603 = 1.3 %

The association of M.m. with Artemisia tridentata and M.p. with Chryso. - Tetradymia was very striking. 0900 we took vegetation density measures at localities where M.p. and M.m. were captured and sampled the plants.
1000 drove into Warm springs and had breakfast. 1030 departed for home. Dave and Diane headed E on Hwy 25, I headed S on Hwy 6. Overcast at times, windy, occasional snow flurries. Saw road-killed Kit Fox (Vulpes) about 5 mi. N of Walker Lake on Hwy ~~Alt.~~ 95. 1500 called Darcey from Fernley. 1830 arrived Richmond.

Total traps for trip = 2769

Total rodent success = 154/2769 = 5.6 %

Microdipodops success = 42/~~2769~~ 2509 = ~~1.5~~ 1.7 % (at Sand Springs lakes)

Total Micro. success: 47/2769 = 1.7 %

Miles = 1300

Gas $ = $42.68.

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0.8 mi. N, 6 mi. W Lost Hills, 500 ft, Kern Co., California

April 1000 Darcey, Emily, Barron and I departed Richmond in the Van and drove S on 580 via Oakland, Livermore and I5 to a point 8 mi N and 3.5 mi. W of Lost Hills. [The purpose of this trip is to collect D. nitratoides for the Fish & Game survey.] We drove about 0.5 mi W on Twisselman Rd. and set 60 live traps just N of the road. [The habitat will be described below (see 10 April)]. The sky was clear; warm day (~70°) with a light W'ly breeze. I heard the "chirps" of Ammospermophilus at this locality. We then drove E on Twisselman Rd toward the Kern Nat. Wildlife Refuge. After about ½ hour on levee roads we arrived at the NW corner of the Refuge. The habitat within the fence was fairly suitable Dipo. habitat. — not especially promising. We continued S along the Western edge of the Refuge and then turned E along the southern edge. Found no suitable habitat outside the Refuge until almost 1 mile from the main hwy that forms the Eastern border of the Refuge. (Little or no good Dipo. habitat within the Refuge). We set out 60 traps about 1 mi. from the road on the southern border of the Refuge, then drove to the Hwy. (= Corcoran Road). We drove North along the Eastern edge of the Refuge and then W. along the northern

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0.8 mi. N, 6 mi. W Lost Hills, 500 ft, Kern Co., California

April (con't) edge — no suitable habitat was seen. We turned around and continued S on Corcoran Road to a point south of the Refuge (6.2 mi. E, 2.5 mi N Lost Hills, 200 ft., Kern Co.) where we set 60 traps in a patch of Salicornia just W of the Hwy. We then continued S and W through Lost Hills to a point 1.0 mi. W Lost Hills where we again set out 60 traps just S of the road. From here we continued W on Hwy 46 then N on a dirt road to a point 0.8 mi N., 6 mi. W Lost Hills where we made camp. 1830: I set out 60 more traps making a total tonight of 300 traps. We pitched the tent, ate and ~~g~~ drank coffee until about 2100. Emily slept in her "port-a-crib" in the tent. (We slept in blankets, as I forgot the sleeping bags!) 2200 The wind picked-up and blew from the west all night. — Not too cold (~45°F) Emily awoke us 0530 the next morning. (½ moon during 1st half of night)

0 April 0.8 mi. N, 6 mi. W Lost Hills, 500 ft., Kern Co., California
0530 awoke and checked traps with following results:

0.8 mi. N, 6 mi. W Lost Hills, 500 ft., Kern Co., California
Habitat: Mostly flat, overgrazed land on the Antelope Plain. — Very little shrubbery as far as one can see. Set traps in sparse clumps of Atriplex lentiformis (30-40 small

0.8 mi. N, 6 mi. W Lost Hills, 500 ft., Kern Co., California

April (con't) plants in total) Sparce "lawn" of grass. Few Dipo. signs, most old. Results: No Captures

1.0 mi. W. Lost Hills, ~~200~~ 350 ft., Kern Co., California
Habitat: fairly dense Atriplex lentiformis, Med.-packed sandy soil near oil workings – little grass cover.
2 D. nitratoides

8 mi. N, 3.5 mi. W Lost Hills, 250 ft., Kern Co., California
Habitat: Fairly dense Atriplex lentiformis. Mixed grassy areas and open areas. Med-hard packed sand.
1 A. nelsoni
1 P. maniculatus

6.2 mi. E, 2.5 mi. N Lost Hills, 200 ft., Kern Co., California
Habitat: Mostly (~90%) well-spaced Salicornia and some small Suaeda fruticosa. Mixed areas of sparse grasses and open, med-hard packed fine sand. (habitat patchy — surrounded by large areas of open field with no shrubs).
3. D. nitratoides

5.3 mi. E, 7 mi. N Lost Hills, 200 ft., Kern Co, California
Habitat: Isolated patch of Suaeda, Salicornia and Happlopappus. Sparce grasses. Hard (dried-mud) soil.
1 D. nitratoides
1 P. maniculatus

1100 we headed further S on I5 to continue the

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Taft, 800 ft., Kern Co., California

10 April (con't) survey. Warm day (~70°), high cirrus clouds, breeze from the West. We set 60 traps about 0.5 mi. E of the Hwy 58 – I5 interchange. We drove on a dirt road about 0.2 mi. N of Hwy 58. (Habitat to be described later). We saw several *Sylvilagus* and 1 *Lepus*. We drove West on Hwy 58, through Buttonwillow, then about 0.5 mi. further W on Lokern Rd. where we set 60 traps just S of Lokern Rd. The weather was quite warm by this time (Darcey carried Emily around in the back-pack).

1300 we got back on Hwy 58 and drove S through McKittrick and Derby Acres to Taft. This entire area of the Valley is oil country. The habitat is essentially "natural" and I have little worry for the native mammals as long as only oil wells are here. We rented a room in Taft (1200 #) so Darcey and Emily could clean-up. I drove NE out of Town on Hwy 119 where I set 60 traps at a point 1.5 mi. E and 3 mi. N Taft, along the edge of a wash just to the S of the Hwy. I continued NE on Hwy 119 and turned NW on Tupman Road where I set out 60 traps 1.5 mi. E and 1.2 mi. S Tupman (just W of road below a steep cliff). I continued back on 119 almost to I5

146 animals to Sio (Frozen).

get ~~c[illegible]~~ capture data for early Sept. 1975 (Nevada Trip)

~~get data on my numbers 464 – 469 (Micros)~~ from DJH.

360 – 160 – 120

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Taft, 800 ft., Kern Co., California.

10 April (con't) where the Alejandro Canal crosses Hwy 119. I turned S and drove about 0.3 mi. along the canal where I set 60 traps along a fence to the E of the canal.

1600 returned to Taft, cleaned-up. Rain much of the night.

11 April Taft, 800 ft., Kern Co., California

0700 Emily woke us up. I (and Barron) drove to check the traps.

1.5 mi. E, 3 mi. N Taft, 600 ft., Kern Co., California

Habitat: fairly lush and dense A. canescens and flowering Hymenoclea salsola. Light, grassy cover with some open areas; Gravelly soil.

2 A. nelsoni
2 D. nitratoides
1 P. maniculatus

1.5 mi. E, 1.2 mi. S Tupman, 400 ft., Kern Co, Calif.

Habitat: Dense, lush A. canescens, hard-pack sand.

3 P. maniculatus
2 D. nitratoides
1 D. heermanni

7 mi. W Old River, Kern Co., California 300 ft.

Habitat: Sparce A. canescens with very few A. lentiformis. Packed, fine, powdery sand. Occasional patches covered with grasses (over)

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Taft, 800 ft. Kern Co., California

April (con't) Results: (con't)

7 mi. W Old River, Kern Co., California, 300 ft.

(see above for habitat description)

6 D. heermanni
3 D. nitratoides
2 A. nelsoni (1 dead)
3 P. maniculatus

I drove back to Taft and picked-up Darcey and Emily. We ate breakfast in Taft (very nice) and then drove via Hwy 119 and Elk Hills road, through Buttonwillow to the next set.

Results:

3.8 mi. W Buttonwillow, Kern Co., California, 300 ft.

Habitat: Dense A. canescens, very few Suaeda, patchy grass; fine, packed sandy soil.

1 D. nitratoides
1 D. heermanni (dead)
1 A. nelsoni
3 White-Crowned Sparrows (Zonotrichia)

We drove through Buttonwillow to the final set.

4.6 mi. E Buttonwillow, 250 ft. Kern Co., California

Habitat: Very patchy, but dense clumps of A. lentiformis and A. canescens. Many dried-up pools, little grass. ~~bag~~ large areas of hard,

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4.6 mi E Buttonwillow, Kern Co., California, 250 ft.

11 April (cont.) fine (dried-up mud) sand. Results:

2 A. nelsoni (released)

4 D. nitratoides (2 released)

1 Perognathus inornatus

1 P. maniculatus

1300 we departed area for home. Dense, threatening ~~clouds~~ clouds, no rain until Livermore. Successful trip.

Carrizo Plain, San Luis Obispo Co., 2000 ft., California.

16 April Ken Ramey, Barron and I departed Richmond 0930. Drove via Oakland, Livermore and Hwy 5 to the Lost Hills turn-off. Drove S from Lost Hills then S on Hwy 33 to Hwy 58 west. Continued over the Temblor Range to Carrizo Plain. Windy day. Clear. ~60°F. 1400 - set out 60 live traps in a small patch of Atriplex canescens between the fork in the road just as Hwy 58 enters the Carrizo Plain. Turned SW on dirt road heading toward the dry lake (Soda lake). Set 60 traps on the N side of the road near its junction with the main N-S road running the length of the valley (see map). ~~Found~~ Found the cranium (crushed) of a Kit-Fox (Vulpes) on this E-W road about midway across the valley. We turned south on the "main-road" (= dirt) and set a third set of 60 live traps very near to the

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Carrizo Plain, San Luis Obispo Co., 2000 ft., California

16 April (con't) actual lake-bed on the extreme SW corner of the lake. We drove about 7 mi. further south on the road then turned east and drove (off the road) across an area of overgrazed land until we encountered apparent native vegetation near the floor of the valley (= 0.7 mi. E of the road). (We headed east exactly where the road is crossed by ~~a~~ a fence with a cattle-guard). We ~~#~~ set 60 traps in this habitat (to be described later) and then returned to the main road. We continued about 7 mi. further S on the main road until we encountered a sandy wash just to the E of the road. I noted much rodent activity and decided to make the 5th set of 60 traps here. We camped about 0.5 mi. W of this locality (see 17 April) in the low hills of the Caliente Range. About 1700 the wind began to die. We played pipes shortly and retired early — Calm night — Clear. ~40-45° F. low.

Carrizo Plain, San Luis Obispo Co., California, 2000 ft.

17 April We arose and checked traps. Very nice, clear, brisk morning.

Results: (over)

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Carrizo Plain, San Luis Obispo Co., California, 2000 ft.

April (con't) Trapping Results:

① Carrizo Plain, 3.8 mi. S, 11.5 mi W Taft (~~in~~ Kern Co.) San Luis Obispo Co., 2200 ft. California

1 *Onychomys torridus*
2 *Dipodomys nitratoides* (1 dead)
4 *Dipodomys heermanni* (1 dead)

Habitat: Sandy wash east of road. Fairly dense, large *Ephedra* (1.5 M.) Much "~~Buct~~ bunch grass". Moderate annual ground cover. Loose, sandy soil (see photo)

② Carrizo Plain, 16.7 mi. W Taft (Kern Co), San Luis Obispo Co., California, 2000 ft.

No Captures

Habitat: On valley floor. Well spaced, small (0.5 M) *A. lentiformis*. Some few (very small) *Suaeda fruticosa*. Much "dead" brush. Patchy open areas of hard-pack sand. Sparse, low annual cover.

③ Carrizo Plain, 7.2 mi. E, 10 mi. S. Simmler, San Luis Obispo Co., California 2000 ft.

No Captures

Habitat: Many small *Happlopappus* and small *A. lentiformis*. (located ~200 M from dry lake bed) only 1 plant of *A. canescens* seen. Nearly solid cover of sparse to moderately dense annual vegetation. → Burrows observed.

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Carrizo Plain, San Luis Obispo Co., California, 2000 ft.

17 April (con't) Trapping Results: (con't)

④ Carrizo Plain, 3 mi E, 6 mi S Simmler, San Luis Obispo Co., 2000 ft., California.

No Captures

Habitat: Dense A. lentiformis. Occasional open areas of hard-pack sand. "Lawn" of annual grasses.

⑤ Carrizo Plain, 7.5 mi. E, 2.5 mi. S Simmler, San Luis Obispo Co., California 2400 ft.

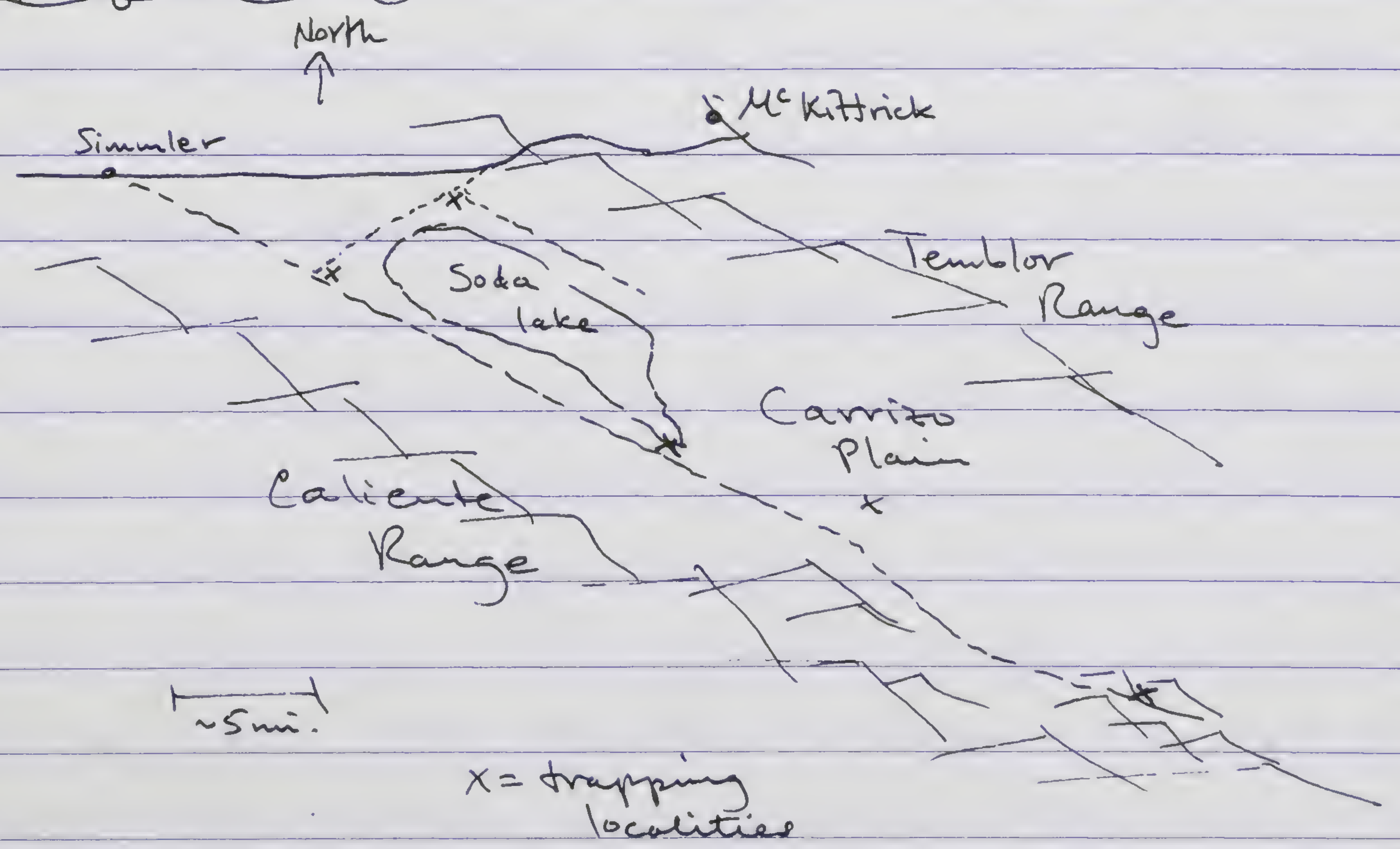
6 Ammospermophilus nelsoni (1 ad / 5 juv.) 1 ad. and 2 young dead

3 D. heermanni (2 released)

4 Perognathus californicus (1 released / 1 dead)

Habitat: Isolated patch of dense A. canescens (1.5 M) between fork in roads (Hwy 58 and side road) "Lawn" of grass. Med-fine, loose soil.

Map of Localities:



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Carrizo Plain, San Luis Obispo Co., California, 2000 ft.

17 April (cont.) 1030 after checking traps, we drove over the Temblor Range on Hwy 58 east and stopped alongside the road to put up skins (1030-1300). Very beautiful day. ~70°F, light breeze, Clear. 1300 drove into McKittrick (no gas) then S. to Taft for gas. We originally planned to set in the Kern River Wash (SW of Bakersfield) so we drove on Hwy 119 and circled the Kern River area (vicinity of Old River) — saw nothing of suitable habitat for anything except beechy ground squirrels. (barren land, no ~~perrenial~~ perennial spp. vegetation to speak of.) We then drove S. ~~E~~ on Old River Road to Maricopa Hwy (= Hwy 166). A med- small patch of apparently natural habit is found just West of Old River Rd. (South) after the junction with Hwy 5 — but we saw no evidence of rodent activity and much evidence that occasional ~~flood~~ flooding occurs (Being in the Buena Vista Lake Bed). We saw patches of native vegetation on both sides of Hwy 166 about 5 mi. E of Maricopa — I'm sure D. nitratoides occurs here — I saw no reason to trap for them (Fish and Game Project). I called Darcey from Maricopa and warned her we were coming home. 1700 departed Maricopa via Rt. 5 to Pleasant Hill in time for Easter Dinner tomorrow.

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Sommerville, Contra Costa Co., California

12 June 1400 John and Patti Hafner and Darcey, Emily and I drove via Kirker Pass Rd to Pittsburg. We turned East then South past the Antioch Dump to the historic mining town of Sommerville. Very warm day, few clouds. We hiked up a small hill to the SW of the old mineshaft. Our main interest was in determining whether or not *Perognathus inornatus* and/or *Dipodomys heermanni berkeleyensis* occur in this area. The vegetation consisted of *Artemisia*, *Salvia* and some *Arctostaphylos* — (I wasn't able to identify a few of the shrubs). We saw little evidence of *Perognathus* in the hilly chapparall areas and no evidence of *Dipodomys*. We returned to the area of the mineshaft where we noted much evidence of what appeared to *Perognathus* diggings in mounds of mine trailings just about 25 meters from the mine entrance (due West). There was no vegetation on the substrate of the mounds — the soil was very fine and almost powdery. — We decided to return at a later date to attempt to collect these alleged *Perognathus*.

1700 - We got a drink of cool water from the park fountain and returned home.

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San Joaquin Valley, Vicinity of Buttonwillow, Kern Co., Calif.

3 June 1000 John Hafner and I drove via Livermore and I-5 to Hwy 198 (NE of Coalinga.) We turned E and drove to Hwy 41 where we turned south. Just before the intersection of Hwy 41 we stopped and ~~at~~ set out 50 live traps in a Salicornia - Suaeda habitat near the road. This was an attempt to capture D. nitratoides nitratoides at its northernmost range (assuming the Kings River to be a natural sub-specific boundary). (Calif. Fish and Game Project.)

— On the trip down Hwy 5 (mentioned earlier) John and I noticed fairly extensive sand dune regions on the hill-tops of the Diablo Range approximately 25 miles SW of Mendota — on the west side of I-5. Good potential habitat for Dipodomys and Perognathus.

— Anyway, we drove by Guernsey, Calif. then turned south on Hwy 43. We continued S then turned East on a farm road about 1 mi. N of Angiola. We set 50 traps in semi-natural (= grazed) Suaeda habitat just south of the road about 1 mi. N, 2 mi E of Angiola. (actual locality taken from Tipton).

We drove South to the Pixley locality of 12 February and set out 50 traps as before. We paced these off so as to cover an area of approximately 2000 sq. meters. We continued S on Hwy 43 through Wasco and Shafter then turned west on to 7th

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San Joaquin Valley, Vicinity of Buttonwillow, Kern Co. California

13 June (con't) standard Road. We stopped at an area of natural Atriplex habitat about 4 mi. S. Shafter (in the Rio Bravo Oil Fields). We set out 50 traps here then drove South and turned west on Hwy 58. We stopped and turned north onto a dirt road about 9.6 mi. East of Buttonwillow. This area encompasses about 20 sections of natural Atriplex habitat — Originally part of the Kern River Flood Plain. We set-up a grid of 10 x 10 traps, 10 meters apart, so as to cover 1 hectare.

2000 Finished setting traps — then had a few beers and crashed. Warm, calm night — Full moon.

14 June San Joaquin Valley, vicinity of Buttonwillow, Kern Co., California

0630 awoke to bright, warm morning. Checked traps in grid: 9 D. nitratoides (2 young)

There was very strong evidence that D. nitratoides plug their burrow entrances at times. — should be looked into. A predator (probably a kit-fox) had passed through the grid during the night and urinated and defecated on a few of the traps. We released all animals then drove to the locality South of Shafter. Results:

1 D. nitratoides

2 A. nelsoni

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San Joaquin Valley,
Vicinity of Buttonwillow, Kern Co., California

14 June (con't) We continued north to the Pixley locality; Results:
5 D. nitratoides (3 ad., 2 juv.)
Drove up Rd 88 and then N. and E to the locality NE of Angiola. Results:
1 D. heermanni
Continued N and W by Hwy's 43 and 41 to the locality S and W of Lemoore. Results:
1 D. nitratoides
At this last locality we caught a 60 mm. long horned lizard - large for the Valley, I believe. We also had 4 traps stolen.
We proceed on to Fresno where I examined Walt Hoffman's thesis on D. nitratoides (at Fresno State University).
1300 Departed Fresno via Hwy's 99, 152 and I-5 to Pleasant Hill, California.

? of Lubbock, Lubbock Co., Texas

25 June 1600 John and I drove to the edge of the "Caprock" east of town and set 50 live traps in small revines. General Mesquite scrub association Artemisia, Stipa?, Poa?, some cacti (Opuntia, Mammalaria), some Yucca. Very grassy in revine bottoms; very sparce grass on exposed hillsides. Rocky soil with occasional areas of fine sand in revine bottoms. Calm night — cloudy ~ 60°F low.

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of Lubbock, Lubbock Co., Texas.

26 June We checked traps with the following results:

1. Sigmodon hispidus (2 ad., 5 juv.)

2. Perognathus hispidus (1 ad., 1 juv.)

Perognathus specimens were returned to lab for chromosomal analysis. Sigmodon specimens were released.

2 mi. E Searles Station, 9 mi. NNE Johannesburg, 3200 ft, San Bernardino Co., California.

9 July 1200. Darcey, Emily, Barron and I departed Richmond and drove via Hwy 580 and 5 to Bakersfield. 1700 Van overheated in Bakersfield traffic (~100°F). We stopped to allow the engine to cool off. No further trouble – appears that the thermostat stuck closed. Continued over Tehachapi Pass and Hwy 14 to the camp 1 locality (above).

1930 – Set out 196 live traps in 4 directions from camp. The substratum is very dry and contains only dried-up annual from the wet winter of 2 years ago. There are numerous rodent diggings on the surface – perhaps the rodents are recovering surface caches due to the low productivity of the vegetation this very dry year.

2030 – Sun set – Still very warm ~ 80°F with a strong breeze from the SW. Moon (full) rose about 1930. We slept in the van to stay out of the wind.

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2 mi. E Searles Station, 9 mi. NNE Johannesburg, 3200 ft,
San Bernardino Co., California

10 July Last night before we slept we heard several calls from Onychomys - I wish I had brought a tape recorder.

0600 Sunrise. I awoke a checked traps. Wind was still rather strong. Results:

East line (50 traps):

7 Perognathus longimembris
1 P. formosus (returned to lab)
4 D. panamintinus
1 A. leucurus
1 O. torridus (returned to lab)

South Line (50 traps):

1 P. longimembris
3 D. panamintinus

West Line (50 traps):

4 P. longimembris
2 D. Panamintinus
1 D. merriami
1 O. torridus (returned to lab)

North Line (46 traps):

7 P. longimembris
2 D. panamintinus
1 N. lepida

Total success: 36/196 ≐ 18%

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2 mi. E Searles Station, 9 mi. NNE Johannesburg, 3200 ft.
San Bernardino Co., California

10 July (con't) The O. torridus in the West Line "sang" once as I approach the trap (about 0715 Hrs.).
0800. We picked-up camp and departed to meet Fern and Rod Carrasztco in Mojave.
1200 Met Fern and Rod (and kids) in Mojave park and drove to California City. Had nice lunch in Park adjacent to lake.
1600. Rod et. al. departed for L.A. Darcey and I returned to Mojave where we checked into the Mojave Motel. ($10.00/night). 1700 Darcey and Emily went for a swim in the pool.
1800 I departed Mojave to set 193 traps at a locality 3 mi. N Mojave (the same locality I have previously trapped.).
I set the traps again in 4 directions from the road that parallels the Power Lines. ~~Dor~~ Drove back into Mojave and relaxed. Retired early. Windy all night - full moon.

11 July Mojave, 3100 ft. Kern Co., California.
0600 awoke and drove to trap site.
3 mi. N. Mojave, 3100 ft. Kern Co. California.

Results:

East Line 50 traps :

7 D. merriami
1 A. leucurus
2 N. lepida

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Mojave, 3100 ft., Kern Co., California

11 July (con't)

Trapping results (con't): 3mi. N. Mojave.

South Line (47 traps):

5 D. merriami
1 N. lepida
2 A. leucurus

West Line (46 traps):

4 D. merriami
1 D. panamintinus
3 P. longimembris
1 P. maniculatus

North Line (50 traps):

1 P. maniculatus
5 D. merriami
3 D. panamintinus
1 P. longimembris

Total Success: 35/193 ≐ 18%

I was disappointed not to catch any P. formosus (for sperm and reprod. tracts) ~~and~~ nor any O. torridus (for vocalization studies). 0800 I returned to Mojave. We relaxed (and swam) and slept most of the day (~105° F). Windy all day.

1700 Wind picked-up throughout the afternoon. I drove North from Mojave ~~one~~ on Hwy 14 to Phillips Road where I turned east and drove

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11.1 mi. N. Mojave (by Hwy 14), Kern Co., California
11 July (con't) approximately 0.4 mi., I then turned S on a dirt road and drove about 0.3 mi. I parked beneath a lone *Yucca brevifolia* and set 193 traps in 4 directions from this tree. Mixed *Larrea* - *Atriplex* community with a few scattered *Yucca* trees. Many areas of fine wind-blown sand.
2000 returned to Mojave. We ate dinner at Reno's Cafe and retired ~2200.

12 July 11.1 mi. N. Mojave (by Hwy 14), Kern Co., California
0600 arose. Very windy still. Checked traps with following results:

9 *D. merriami*
1 *P. longimembris*
1 *A. leucurus* (1 eye permanently closed).

Success: $\frac{11}{193} \doteq 5\%$

The strong wind had blown over many of the aluminum traps. Others were set off by blowing dust. Poor success due to combination of wind and full moon.
0800 return to Mojave. Packed-up and departed 0930 for home. Pleasant return trip - not too hot in the Central Valley (~90°F).
1530 - arrived Richmond.

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Las Cruces, Doña Ana Co., 3896 ft., New Mexico.

1-2 August John Hafner and I departed Richmond at 1715 last evening (in a U.C. Datsun pick-up) and drove via Bakersfield, ~~Kig~~ Kingman Flagstaff, etc. to Albuquerque, New Mexico. We filled-up the liquid nitrogen container in Albuquerque at 1500 (Central Time) then visited Dave and Diane Hafner. Mom and Dad were in Albuquerque for a short visit before returning ~~tho~~ to the Bay Area, so we visited for about ½ hour before we hit the road south to meet Jim and Carol Patton in Las Cruces.

2000 Met the Patton's at the Hwy 70-80 bridge and checked into a local motel. (13.50 for the room). Ate dinner at a local mexican place before retiring at ~2230. Weather not too hot. Very humid - occasional afternoon thunder showers. ½ moon during the 1st part of the night - no traps set this evening.

Rio Grande, 0.8 mi. S Radium Springs, Doña Ana Co., New Mexico.

3 August 0800 John and I stretched some wire for skinning then met Jim and Carol for breakfast. We later drove to a market

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Rio Grande, 0.8 mi. S Radium Springs, Doña Ana Co., New Mexico.

3 August (con't) in Las Cruces for some supplies. It is a very nice mornings. Warm (~70°F) and clear.
1000 Drove from Las Cruces via Hwy 85 north to Radium Springs, then south 0.8 mi. to the banks of the Rio Grande. We stopped by the road on the SW side of the river and from there we set out in 4 directions to set gopher traps (McAbee). John and I set along the northern edge of the river, but had real difficulty finding fresh gopher evidence. The heat during the late morning was apparently resulting in very little gopher (above ground) activity. We searched several fields including pastures, open fields, and alfalfa fields. Finally, about 1400 we found a hot-spot of gophers in the pasture on the NW bank of the river.
1600 - We continually checked traps and returned the specimens for processing. Jim had the lab set-up in the back of his VW van — we took tissue and blood (and made ~~tables~~ labels).
1830 JCH noted several bats (Tadarida?) feeding near the bridge — no bats could be seen roosting below the bridge. We picked-up "camp" and drove across the

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Rio Grande, 0.8 mi. S Radium Springs, Doña Ana Co., New Mexico.

river and paid $2 per vehicle to camp in an established campground. As soon as we arrived, we began putting-up the 23 McAbee caught gophers. — (an additional 3 we caught live — JLP kept them for later karyotyping.)

2130 finished preparing the animals. Warm evening with almost no breeze. We sat and talked 'till almost midnight. Jim and Carol set up their tent due to ominous weather to the NW — JCH and I slept out on cots — but we kept the tarp handy in case of rain. 0030 (4 August) light rain followed by one heavy cloudburst, then a peaceful night. (ca. 65° F). No traps out this evening. All the specimens captured today we catalogued in JLP's catalogue.

4 August Ruidoso, Lincoln Co., New Mexico, ~6000 ft.

0700 awoke and began to break camp. Jim and Carol got up a little later. We observed a Muskrat (Ondatra) in a small pond near camp, then departed for Las Cruces. Jim and Carol headed north to trap along the Rio Grande. John and I ate ham and eggs in Las Cruces then

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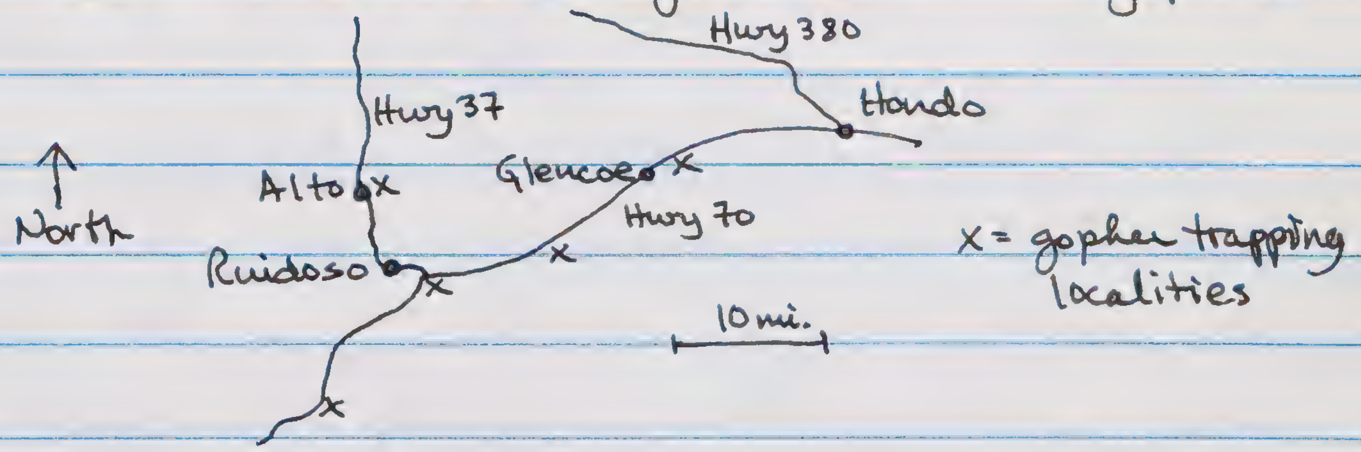
4 August (con't) Ruidoso, Lincoln Co., New Mexico, ~6000 ft.

northeast on Hwy 70-82. The Organ Mtns. were quite scenic on the eastern side. We were stopped for about 45 minutes at an Army road block to wait for the firing of a missle at the White Sands test Range. Nothing too spectacular.... Drove via Alamogordo and Tularosa to a point approximately 8 mi. SW of Ruidoso. At this locality we set 2 sets (4 traps) of gopher traps (live catch). We then set traps at approximatily 8 mi. intervals along Hwy 70 to a point approx. 2 mi. E of Glencoe. We returned to Ruidoso and drove NE to Alto where we again set 4 gopher traps.



1800 we drove further north of Alto in hopes of setting traps near Nogal — the road west of Angus was pretty bad so we returned to Ruidoso to relax. We ate dinner (Pizza and beer) then began checking traps. There were no captures at any of the localities save the one SW of Ruidoso.

Ruidoso, Lincoln Co., 6000 ft., New Mexico.

4 August (con't) At this locality (6.6 mi. S, 0.5 mi. W Ruidoso, 7600 ft., Otero Co., New Mexico.) we captured:

1 Thomomys bottae

Probably of the race ruidosae. We will be sure when we karyotype. I neglected to mentioon that we checked into a motel in Ruidoso. — $20/night !!! The racing at Ruidoso Downs resumes tomorrow and all motels are filling-up... so rates are very high. The town of Ruidoso, itself, is quite nice — very "touristy" with little shops and ski and tennis shops, etc.

2230 completed trap checking. As mentioned above, very poor results for 5 localities effort. We called home — all is fine.

5 August Ruidoso, Lincoln Co., ~6000 ft., New Mexico.

0900 arose, ate breakfast in town. Checked all trap sets — no captures. Can't figure why. Many traps are plugged, but in many cases the hole is plugged right at the trap entrance. — anyway... we were having quite a few problems with the trigger mechanism on some of the traps so we returned to the motel room and worked on them.

1300 departed Ruidoso. Drove NW on Hwy 70 in search of new localities closer to Hondo.

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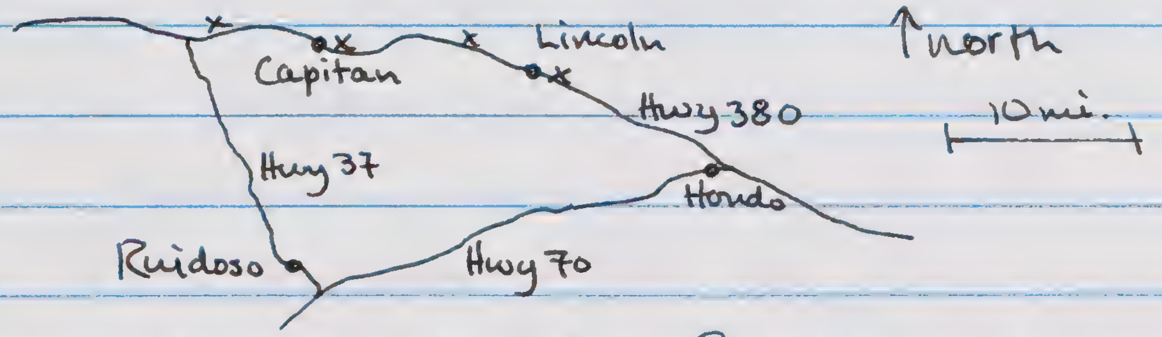
Ruidoso, Lincoln Co., ~6000 ft., New Mexico.

5 August (cont) (We had left all of last nights gopher sets out except for the Alto locality and the SW of Ruidoso locality where we caught the gopher.) We could find no traces of gophers on further E than approximately 2 mi. E of Glencoe. We finally realized that these gophers were high altitude animals and we were losing altitude as we approached Hondo. We then decided to set near the Capitan Mtns. in the valley of the Rio Bonito. We drove NW on Hwy 380 from Hondo and set 4 new localities stretching from E of Lincoln to W of Capitan (exact localities below).



1900 we drove back into Capitan where we had a real nice Mexican meal. John then bought a 6-pack and we drove out to check the traps. At the western-most locality: (2.7 mi. N, 6.5 mi. W Capitan, 6800 ft., Lincoln Co, New Mexico.) I shot an adult ♂ cottontail

1 *Sylvilagus audoboni*

I took skull and tissue. The animal did

5 August (con't) not appear to be in breeding condition. We hiked for a short while in the canyon north of the highway noting many cacti (both Mammalaria and Cholla) in the mixed Juniper–Pine forest. Much gopher evidence also. I noted a Peromyscus sp. in a hollow of an upright stump. We attempted to catch it but couldn't.

2000 We drove E to check our traps. Again no results. We returned to Hondo via Hwy 380 noting a 4-point buck deer on the road about 5 mi. NW of Hondo. We drove west on 70 and checked the traps from yesterday. We reasoned that the foreign odor of the brand-new traps may be the problem, so we put grain (oats) in every trap on Hwy 70 to see if we might get better results. If not, we'll smear all traps with "gopher guts" tomorrow to give them a "gopher-like" odor — perhaps that will attract the animals? I set a McAbee trap at the locality nearest Ruidoso to get our animal to scent the traps.

2300 wrote-up field notes and retired at 2400. Nice day today. Ca. 90°F — almost cloudless sky — light breeze.

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Various locales, Lincoln Co., New Mexico.

6 August 0800 awoke, had breakfast and checked McAbee traps — no results. — traps were buried. Set several more McAbee's near Hwy. 70 about 1 mi. SW of the Hwy 37 intersection — 1300 drove SW on Hwy 70 and choose new locality to set live traps:

0.5 mi. NE Mescalero, 6600 ft. Otero Co.

Set 3 live sets (4 traps) and 3 McAbee sets (=4 traps).

1500 checked traps at 1st locality — no captures, again traps were buried. Checked traps at Mescalero locality; captured

1 Thomomys bottae (caught in live trap but crushed by door).

We used this animal's carcass to smear gopher smell over all live traps.

1600 drove via Hwy 70 to Hwy 380 and then NE to check all localities. Captured

1 Thomomys bottae at the

locality:

2.7 mi. N, 6.5 mi. W Capitan, Lincoln Co.

I also shot an additional Sylvilagus there. We drove back to check the entire circuit of traps and camped on a side road near Mescalero. Very cold night — cloudless with a full moon.

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Various locales, Lincoln Co., New Mexico.

7 August Checked and re-checked traps all day - very warm day - no rain (ca. 90°F). Captured 1 gopher at the locality:

1.2 mi. S, 7 mi. E Capitan

1 Thomomys bottae

1400 ate rabbit that I collected yesterday. Had watermelon for dessert. Checked 2 caves near Lake Nogal for bats - no bats. Camped on the dirt road connecting Hwy 380 with Hwy 37 (road to Lake Nogal). Drove into Lincoln to visit the "Last escape of Billy the Kid Pagent" - Lincoln's claim to fame. Not much happening there. Had a couple beers at the bar in Capitan then drove to camp.

8 August Various locales, Lincoln Co., New Mexico.

0800 drove via Hwy 37 into Ruidoso, then via Hwy 70 to Mescalero - checked traps - no success. (Pulled traps.) Returned to locality near Ruidoso - Captured:

1 Thomomys bottae

Locality: 1.3 mi. S, 2.8 mi. E Ruidoso.

Drove further NE on Hwy 70. Called Dave Hafner to tell him of our poor trapping results so that he could pass the word

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Various locales, Lincoln Co., New Mexico

8 August (con't) to the Patton's when they passed through Albuquerque. Checked localities Northeast of Ruidoso (see map) then turned NW on Hwy ~~224~~ 214. Drove via dirt road to near summit on Hwy 224 and set 3 live sets at entrance to Ft. Stanton Marine Reservation. Returned to this locality later and captured 1 gopher:

5.5 mi. S, 4.5 mi. E Capitan, Lincoln Co.

1 Thomomys bottae

Camped off Hwy 380 between Lincoln and Capitan near Rio Salada. Slept outside — nice night. Full moon.

9 August Capitan, 6400 ft., Lincoln Co., New Mexico.

0800 awoke, checked all traps. Drove via Hwy ~~224~~ 214 to the localities NE of Ruidoso (on Hwy 70) — results:

5.7 mi. N, 15 mi. E Ruidoso

1 Thomomys bottae

2.4 mi. N, 9. mi. E Ruidoso

1 Thomomys bottae

We now have 8 live gophers for karyotyping.

1200 Drove via Hwy 224 and 380 to Capitan where we checked into a model ($15.60).

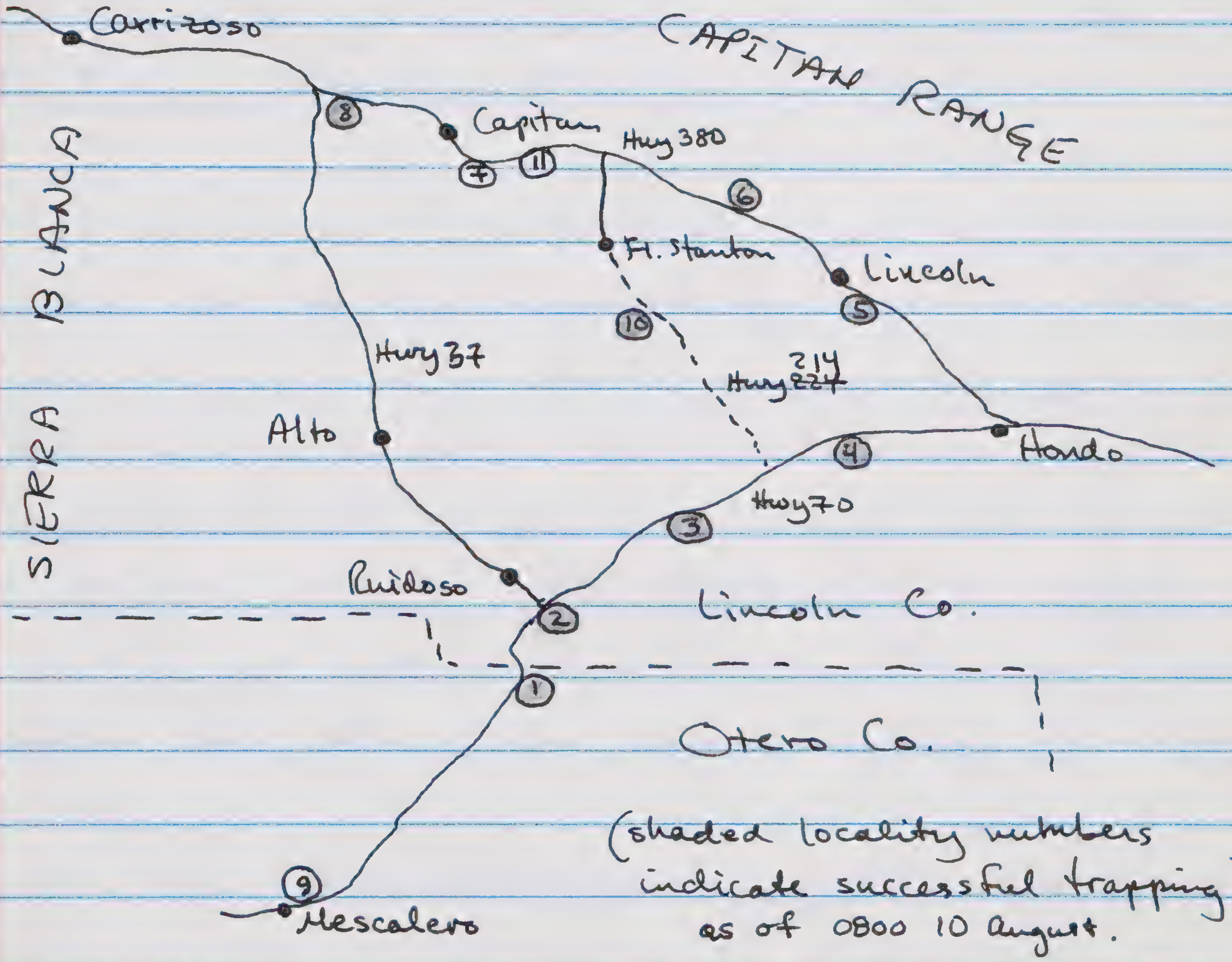
1300 injected animals with Colchicine.

1700 finished lab work and began to look at slides.

Journal

Hafner, M. S.
1976.

10 August 0800 awoke, had breakfast and returned to slide examination. The scope is very poor, making determinatcion of subspecific identity of individuals very diffifult. Map of all localities trapped thus far:



(shaded locality numbers indicate successful trapping) as of 0800 10 August.

List of localities:

① 6.6 mi. S, 0.5 mi. W Ruidoso, 7600 ft., Otero Co.

② 1.3 mi. S, 2.8 mi. E Ruidoso, 6600 ft., Lincoln Co.

③ 2.4 mi. N, 9 mi. E Ruidoso, 6200 ft., Lincoln Co.

④ 5.7 mi. N, 15 mi. E Ruidoso, 5800 ft., Lincoln Co.

⑤ 4 mi. S, 11 mi. E Capitan, 5800 ft., Lincoln Co.

⑥ 1.2 mi. S, 7 mi. E Capitan, 6000 ft., Lincoln Co.

Journal

Hafner, M.S.
1976

Various locales, Lincoln Co., New Mexico.

10 August (con't) List of locales from Map on previous page: (con't)

(7) 0.3 mi. E Capitan, 6400 ft., Lincoln Co., N.M.

(8) 2.7 mi. N, 6.5 mi. W Capitan, 6800 ft. Lincoln Co.

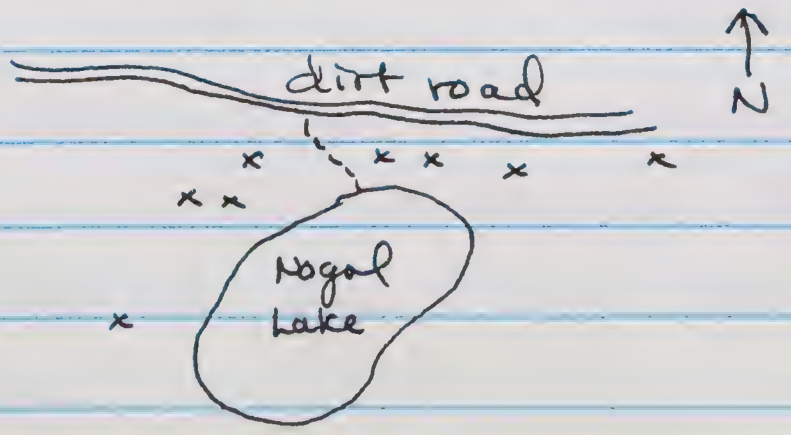
(9) 0.5 mi. NE Mescalero, Otero Co., 6600 ft.

(10) 5.5 mi. S, 4.5 mi. E, Capitan, 6700 ft. Lincoln Co.

(11) 2 mi. E Capitan, 6300 ft., Lincoln Co.

1200 checked out of motel and, after getting supplies, drove west to the turn-off to Nogal Lake. We were depating as to whether we should go to Albuquerque to get a better scope or not. We decided to set traps near Nogal Lake ~~at~~ and continue examining slides. (We caught 1 gopher at the set just east of Capitan, (7) above). We pulled all other traps before heading for Nogal Lake.

1400 John continued examining slides to determine the identity of the animals Karyotyped yesterday. I set off for Nogal Lake and set 7 sets = 17 traps as below:

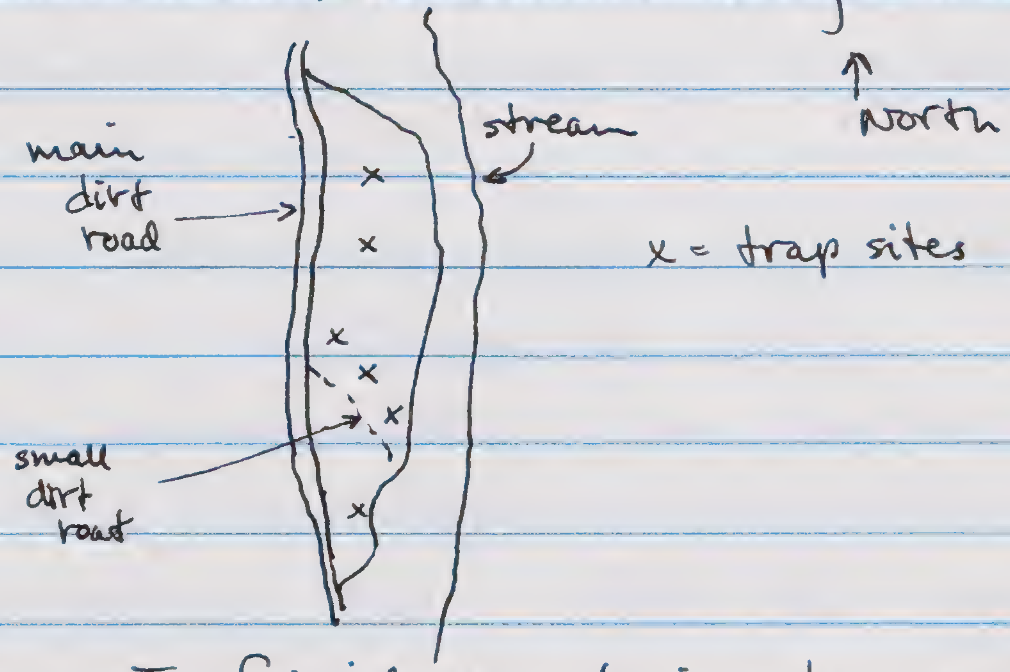


Journal

Hafner, M.S.
1976

Nogal Lake, Lincoln Co., 6900 ft., New Mexico.

10 August (con't) The rain fell continuously as I set traps. A moderate breeze blew from the SE. I then drove to Hwy 37 and turned NW toward Nogal. Just before entering Nogal, I turned S on Nogal Canyon Road and drove to a point 5.7 mi. by road from Hwy 37. (see exact locality below.). I set out 6 sets (= 10 traps) in a small meadow to the east of the dirt road between the small creek and the road. Again, the rain fell continuously as I worked.



1800 When I finished setting the southernmost traps, I checked the others and captured 1 gopher in the northernmost set. I returned to camp near Nogal Lake and John and I ate dinner (Hot-dogs, beers). We later returned to the Nogal Canyon localities, but caught nothing. Strong rains. We also checked the Nogal Lake sets — no captures.

Journal

Hafner, M.S.
1976

Nogal Lake, Lincoln Co., 6900 ft. New Mexico.

11 August 0030 strong rains fell — the tent fared well.
0730 awoke to bright morning. Checked Nogal lake sets:

4 Gophers (Thomomys)

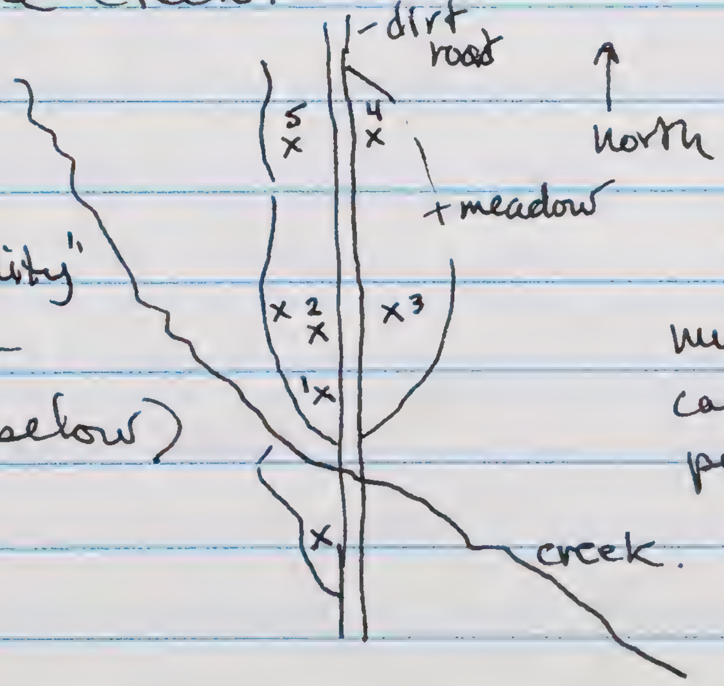
0830 Pulled Nogal lake traps. Noted adult Red-tailed Hawk (Buteo) upon return to camp perched on top of a tall Juniper. The hawk had an unusually pale breast.
0900 checked Nogal Canyon traps after having breakfast in Capitan. Captured 1 more Gopher; making a total of 2 gophers for this locality:

4.0 mi. S, 3.2 mi. W Nogal, 7800 ft.

2 Thomomys bottae

We drove approximately 2 mi. north on the dirt road (back towards Nogal) and set 7 sets (= 13 traps) near where the road crosses the creek:

"Creek locality" (see exact locality below)



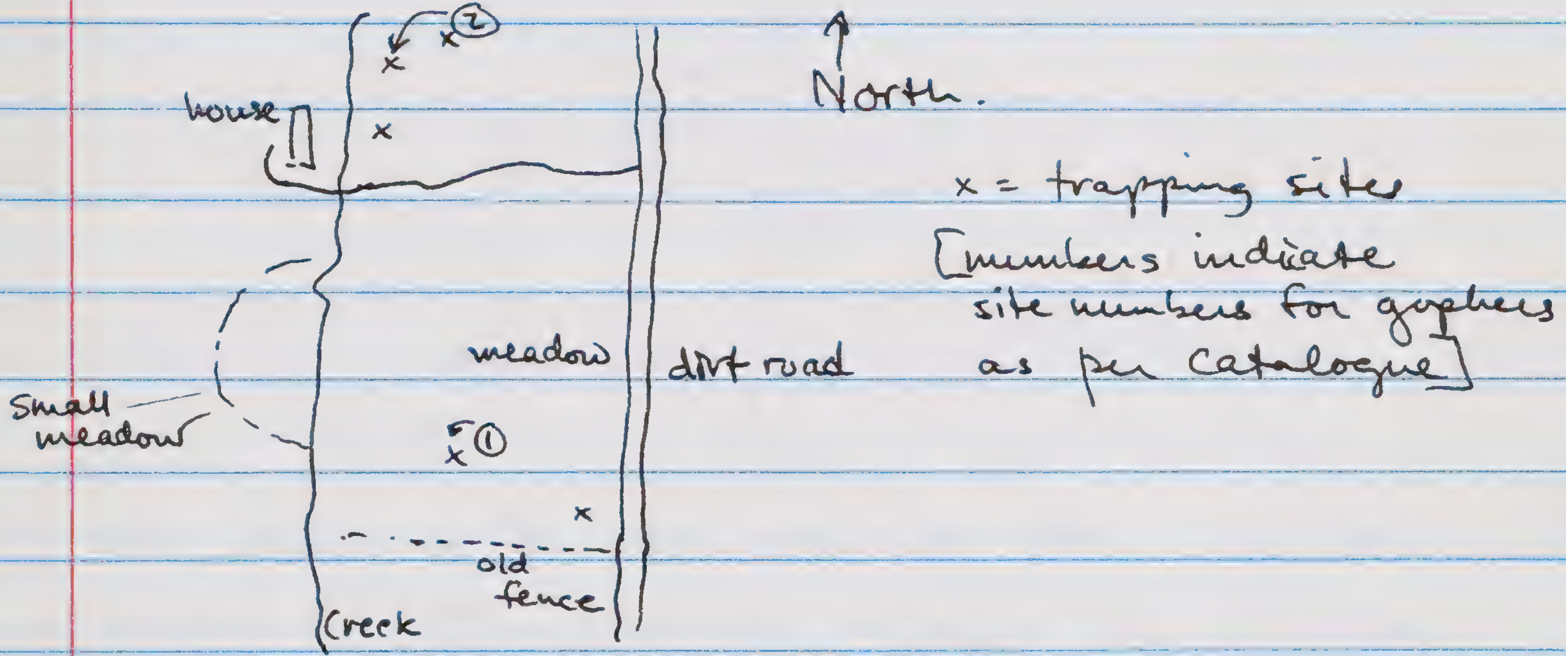
x = trap sites
numbers indicate capture sites as per catalogue.

Journal

Hafner, M.S.
1976

Nogal Lake, Lincoln Co., 6900 ft., New Mexico.

11 August (con't) After setting traps near the creek, we drove about another mile further north on the Nogal canyon road and set 8 sets (=16 traps) in the large Meadow to the west of the road. See exact locality below ("Meadow locality").



We noted a group of semi-ferel pigs as we passed near the creek — they had the brown fur — and lean, rugged look of wild pigs, but no tusks yet.

1400 we returned to the "Creek Locality" (above previous page) and captured 5 gophers as noted at localities 1 thru 5 on previous page.

5 Thomomys

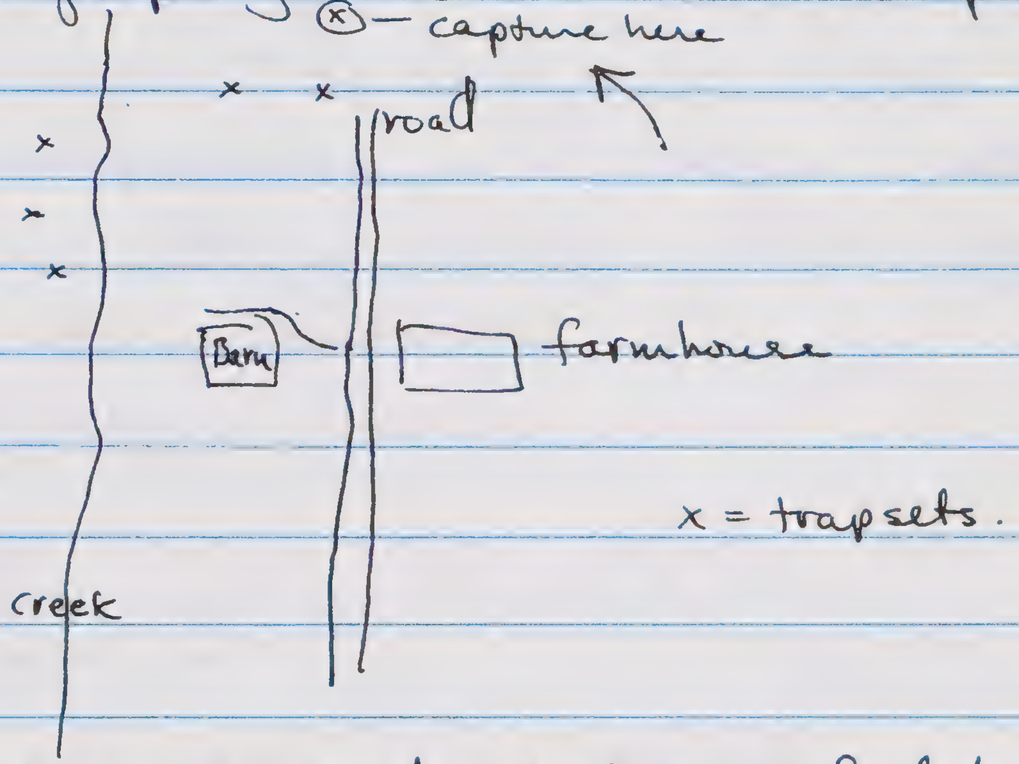
locality: 2.8 mi. S, 2.0 mi. W Nogal, 7300 ft.

We checked the "Meadow" locality sets, but had no captures. We pulled the traps from the "Creek" locality and drove north on the dirt road to the farmhouse located

Hafner, M.S. Journal
1972

Nogal Lake, 6900 ft. Lincoln Co., New Mexico.

11 August (con't) approximately 2 mi. S of Nogal. We talked with the owner and gained permission to set on his property. We each set 5 traps as follows:



We returned to camp about 1800 and determined exact locality for the Nogal Canyon sites. 2000 went into Capitan and had a few brews. Noted many Sylvilagus crossing road between Hwy 380 and 37 upon return to camp (2200).

Nogal Lake, 6900 ft., Lincoln Co., New Mexico.

12 August 0730 awoke and drove to check Nogal canyon sites. Results:

~~Cree~~ ("Meadow locality")

= 2.4 mi. S, 0.8 mi W Nogal, 6900 ft.

2 Thomomys (noted on previous page)

("Farmhouse locality)

= 2 mi. S Nogal, 6800 ft.

1 Thomomys (as noted above)

We pulled all traps for the present and

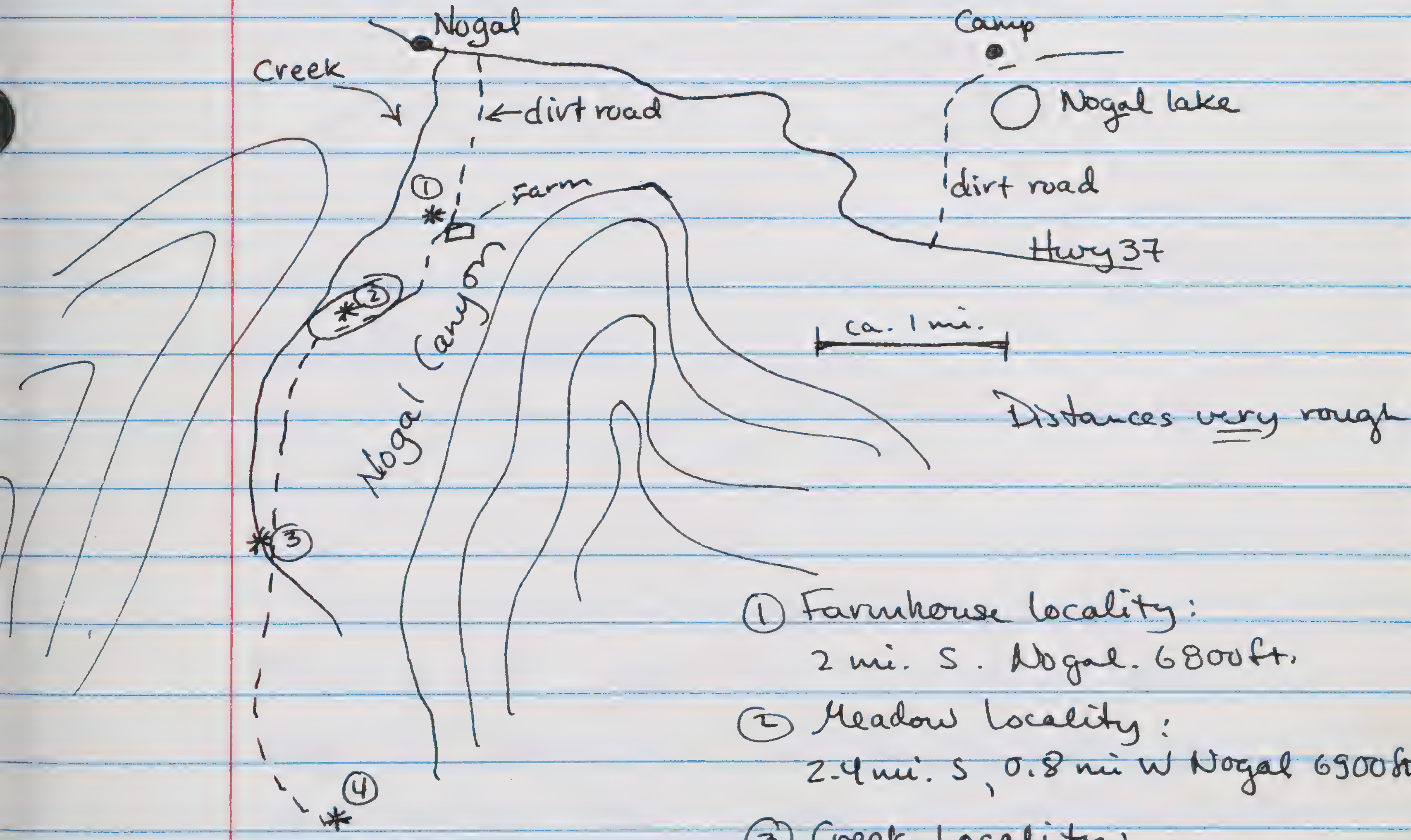
Journal

Hafner, M.S.
1976

Nogal Lake, 6900 ft. Lincoln Co., New Mexico.

12 August (con't) drove to Carrizozo for breakfast. 0930 Checked into Motel ($13.52) and at 1010 injected first group of gophers for karyotyping. Have 15 animals to do this time. Approximately 1430 finished karyotyping and began putting-up specimens. Strong winds and thunder-showers continue outside.

Map of Nogal Canyon:



① Farmhouse locality:
2 mi. S. Nogal. 6800 ft.

② Meadow locality:
2.4 mi. S, 0.8 mi W Nogal 6900 ft.

③ Creek locality:
2.8 mi. S, 2.0 mi. W Nogal 7300 ft.

④ "Head of Canyon" locality:
4.0 mi. S, 3.2 mi. W Nogal 7800 ft.

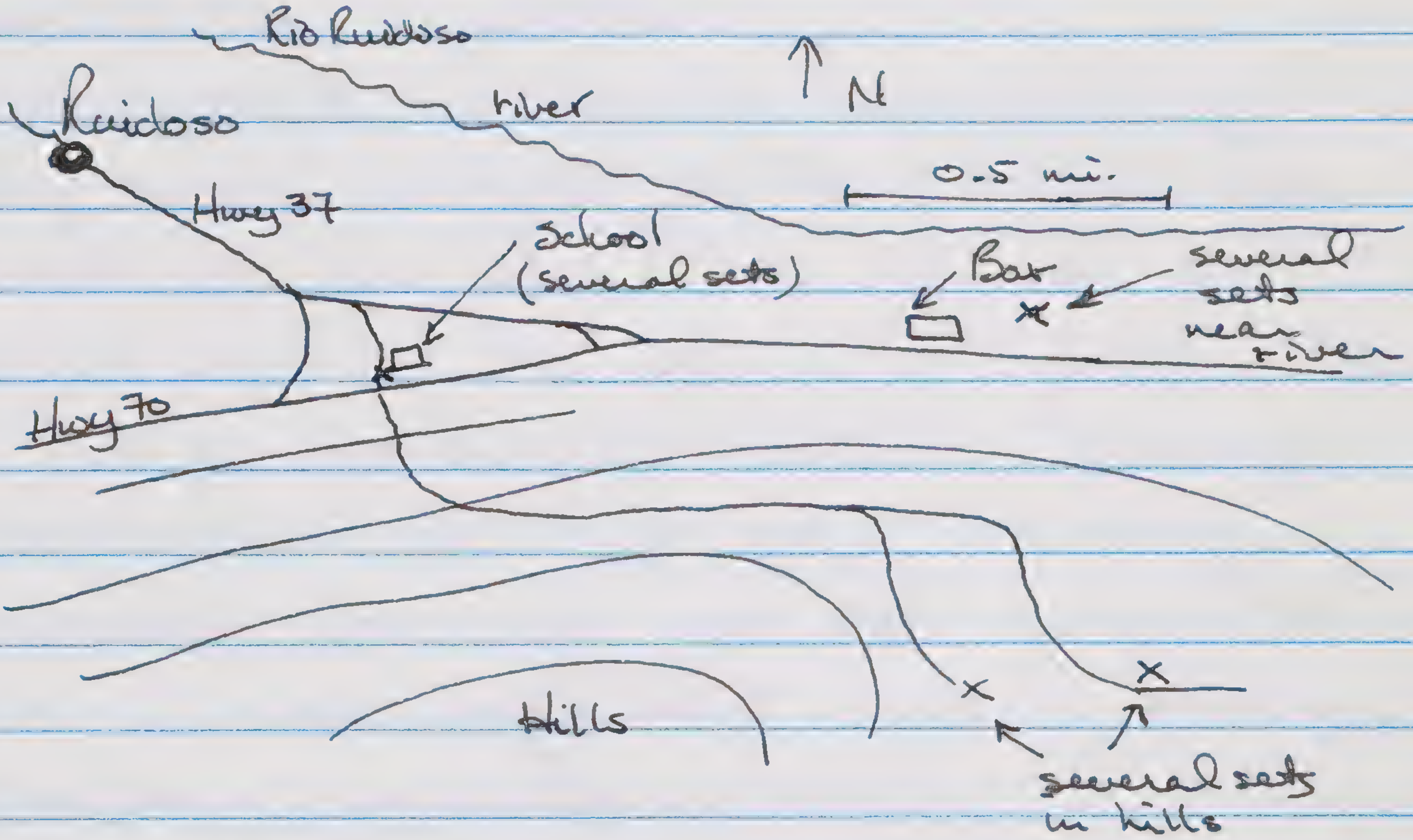
1800 wrote field notes and relaxed.

Journal

Hafner, M.S.
1976

Ruidoso, Lincoln Co., 6700 ft., New Mexico.

13 August 0700 awoke in Carrizozo, had breakfast, and drove, via Nogal, to Ruidoso. Set gopher traps as below:



Exact localities:

(School) = 0.8 mi. S, 2.7 mi. E Ruidoso, 6500 ft.

(Hills) = 1.0 mi. S, 3.7 mi E Ruidoso., 6700 ft.

(Bar) = 0.3 mi. S, 3.8 mi E Ruidoso, 6400 ft.

We checked and rechecked traps all day. I caught 1 gopher at the School site. We left the traps out for the night. Later, we went to the "Bar" and whooped-it-up till late. 2400 made camp in the National Forest Camp Ground just Northeast of Ruidoso.

14 August Ruidoso, Lincoln Co., 6700 ft., New Mexico.

0800 arose and checked traps. John caught 1 gopher at the "Hills" locality. We checked

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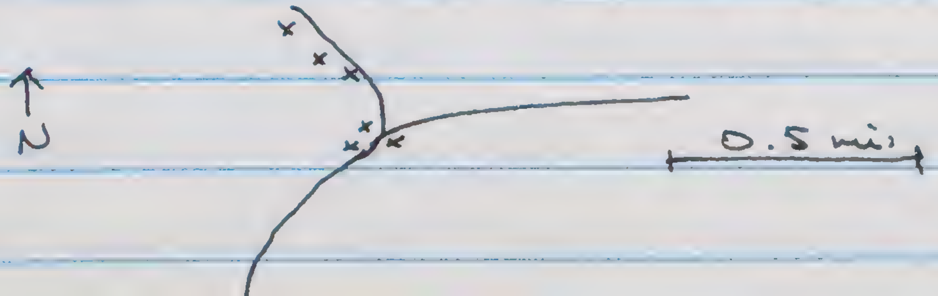
Hafner, M.S.
1976

Ruidoso, Lincoln Co., 6700 ft., New Mexico.

14 August (con't) the traps throughout the morning and pulled them at 1400. I caught 1 gopher at the "Bar" locality — giving us one animal from each of the 3 localities.

1400 departed Ruidoso area and drove via Hwy 70 and Hwy 214 to the Capitan Pass turnoff of Hwy 380. Drove NE over a terrible road to the summit of Capitan Gap. — Saw no suitable habitat for *Thomomys*. (Too dense forest and much too rocky). Decended down the NE side of the Pass over an even worse road — met a family attempting (apparently successfully) to pull a house-trailer up the steep, rocky grade!

1600 set 4 sets = 7 traps in a small clearing at about the 6900 ft. elevation mark. We were very near to the rocky pinnicles that lay just to the west of the road. The habitat was definitely *ruidosae* type, being mixed conifer with few *Juniperus*. We drove about 1 mile further where the road forks to the east. We set 6 ~~traps~~ sets = 13 traps near the road fork as below:



Journal

Hafner, M.S.
1976

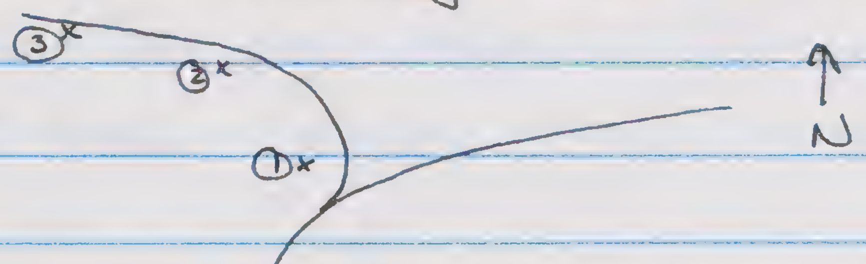
Capitan Mtns., Lincoln Co., New Mexico.

14 August (con't) We drove back to the first locality and camped for the night. Saw several bats ~2000 – one very large, may have been a *Lasiurus*.

Capitan Mtns., Lincoln Co., New Mexico.

15 August 0730 awoke and checked traps near camp. – No captures. – 2 of the holes were plugged. We drove to the 2nd locality:

3 *Thomomys bottae*



No. ① was captured in a small meadow surrounded by *Juniperus* spp. – Light soil color – (No. ② also).
No. ③ was captured in a very ~~small~~ clearing ca. 0.3 mi. from the road fork. – the clearing contained some pines and a few *Juniperus* spp. – Darker soil color.

As this habitat contained a mixture of *Pinus* and *Juniperus* we were hoping to have a contact zone between *T. b. actuosus* and *ruidosae*.

1000 drove back to the 1st locality – no captures. We waited until 1300 for results. I climbed the pinnicles to the west – beautiful view

Hafner, M.S. Journal
1976

Capitan Mtns., Lincoln Co., New Mexico.

15 August (con't) We set the pinning boards out in the sun to allow the skins to dry somewhat.

1300 we were quite desperate to capture some ruidosae from the Capitan Mtns. --- we attempted to dig-out an animal - needless to say, we failed - Great exercise in 95° weather.

1400 drove into Capitan. Had lunch and headed for Carrizozo to karyotype the 6 specimens we now have. (3 from Ruidoso area + 3 from Capitan Mtns. — exact locality:

7.2 mi. N, 6.7 mi. E Capitan, 6900 ft.)

The sky was becomming quite cloudy and we debated as to whether we should hole-up or not - (rainy weather being great for trapping) - we decided to karyotype and head for Albuquerque mañana. We need several things that Dave has offered to supply.

1600 - Injected the 6 gophers - karyotyped and put them up. John called Dave to make arrangements for tomorrow - We're very tired. The storm came to nothing - Mere afternoon sprinkles in the mountains. We're still waiting for proper rain.

Journal

Hafner, M.S.
1976.

Albuquerque, Bernalillo Co., New Mexico.

16 August We awoke in Carrizozo, 0730, ate breakfast and drove via Hwy 380 and Hwy 25 to Albuquerque. The Mal País lava flows were quite impressive. (Just west of Carrizozo.). 1230 arrived at University of New Mexico where we met Dave at the Museum of Southwestern Biology. We gathered-up the supplies we needed (Acetone, rubber-bulbs, immersion oil, slide boxes, "Mammals of New Mexico", etc.) then examined the slides we had already karyotyped. We were able to positively identify all but one specimen (MSH 608) from the "Bar" locality near Ruidoso. This individual had 22 acrocentrics (by our determination) making it an F_1 individual of the 4 and 28 actocentric parental types. The resolution wasn't to good, and we didn't have the time to properly examine the slides. We did, however determine that the break between the "races" occurs (as suspected) between the "Large Meadow" and the "Creek" locality in Nogal Canyon, and somewhere very near the "Bar" locality in the Ruidoso area. We now know where to concentrate our efforts. 1800 left UNM for Dave's home. Diane's mother, Gladys, was visiting them. We had a very

Journal

Hafner, M.S.
1976

Albuquerque, Bernalillo Co., New Mexico.

16 August (con't) nice dinner and relaxing evening. I neglected to mention that, while at UNM, we looked at E.R. Hall's original description of Thomomys bottae ruidosae (1932, Proc. Biol. Soc. Wash. 45:96). Nothing very exciting - had no mention of the obvious habitat preferences we have noted for these "races".

Albuquerque, Bernalillo Co., New Mexico.

17 August 0700 awoke, ate breakfast and 0900 departed Albuquerque for the Sacramento Mtns. Drove via Hwy 25 South to Hwy 380 then east to Nogal. (Hwy 37). The clouds were becoming quite threatening by 1130. We noted a Cooper's Hawk sitting on the Highway about 10 mi. west of Carrizozo. Not sure why the hawk was on the road, but we almost ran him over as he took off.

1230. Set all traps (38) out in the area of the contact zone in Nogal Canyon. Occasional light rainfall all afternoon. (Captures as per map on following page). We noted that we were catching both dark, small animals (ruidosae) and larger, lighter animals to the north (actuosus). John noted a Tamiasciurus cache on the west side of the creek near the trapping area - and later he spotted the animal nearby.

Journal

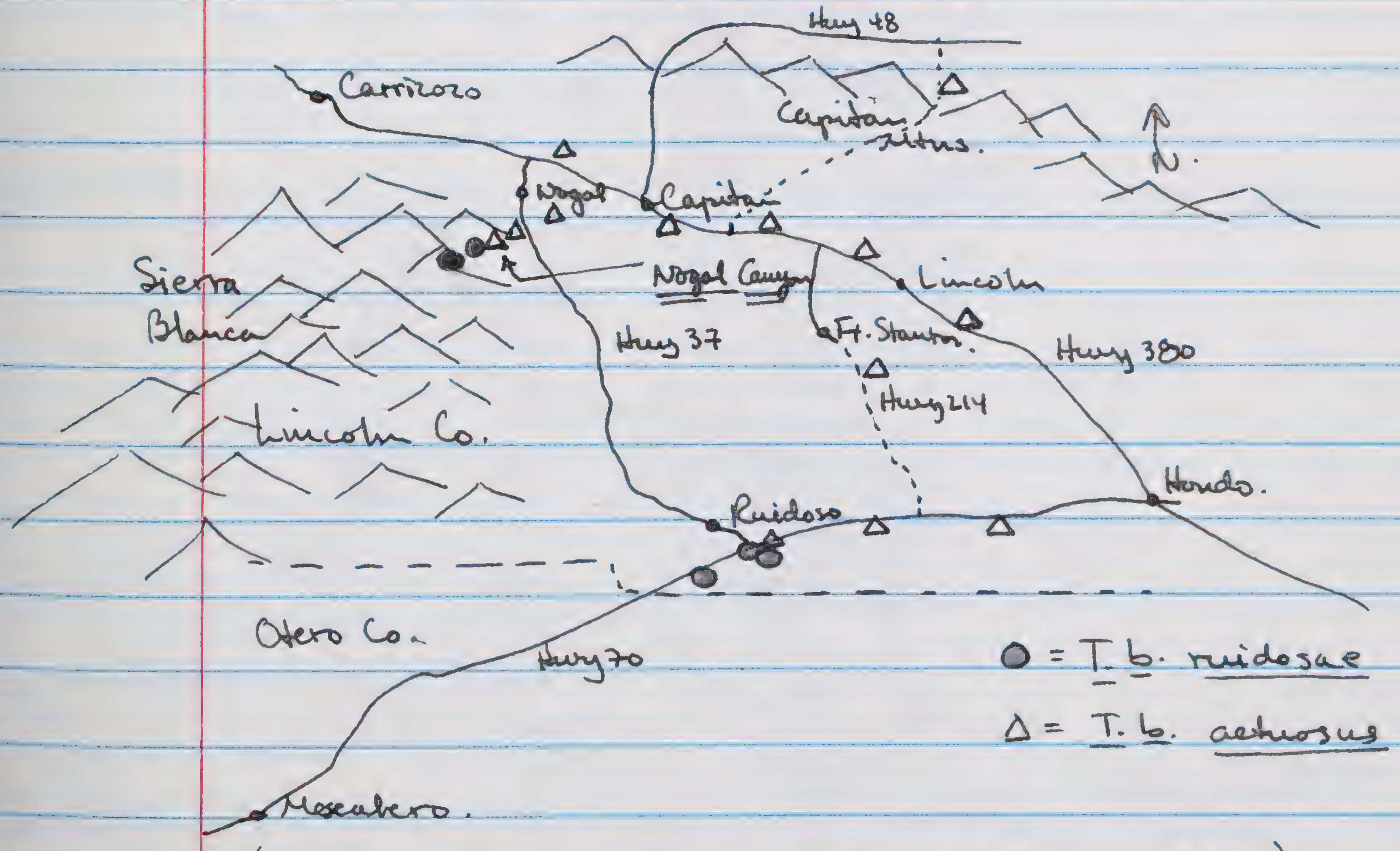
Hafner, M.S.
1976

Capitan Mtns., Lincoln Co., New Mexico.

17 August (con't) By 1800 we had captured 12 Thomomys so we left all but 6 traps and drove into Capitan for dinner. The sky was still quite overcast — no rain since ~1600. Called Darcey from Capitan — all's well. 1930 Departed Capitan via Hwy 48 North to the Capitan Pass turnoff. Drove Southeast to the locality where we had previously attempted to trap ruidosae. Set out 7 traps in 2 sets:

Exact locality = 6.5 mi. N, 6.7 mi. E Capitan, 6900 ft.

2300 Still somewhat overcast — moderate wind — no moon yet. Thus far we have karyotypically identified animals as follows:



(See 10, 13, 15, 17 August for exact localities.)

Journal

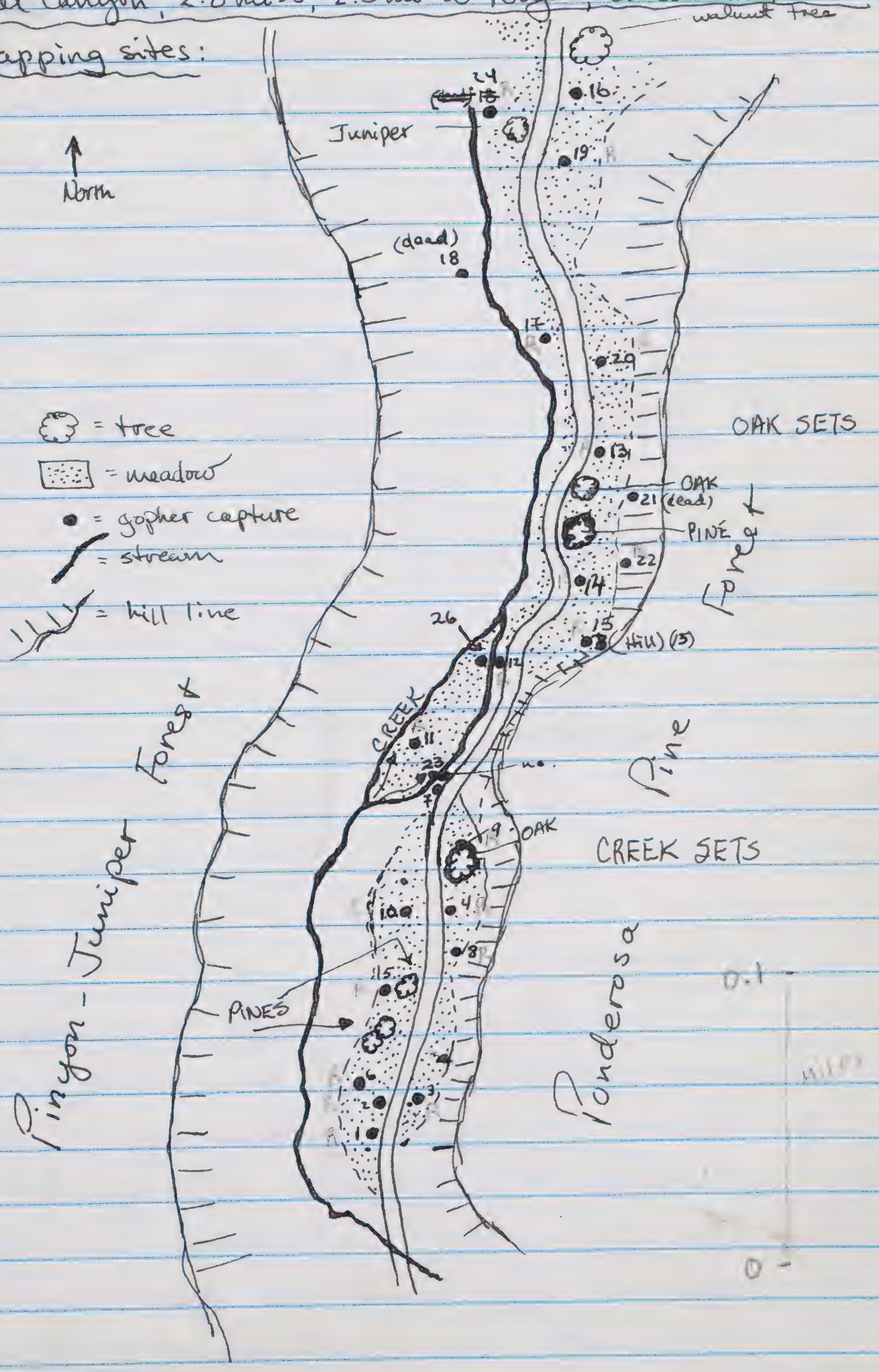
Hafner, M.S.
1976

7300 ft.

Nogal Canyon, 2.8 mi S, 2.0 mi W Nogal, Lincoln Co., N.M.

7 August

Trapping sites:



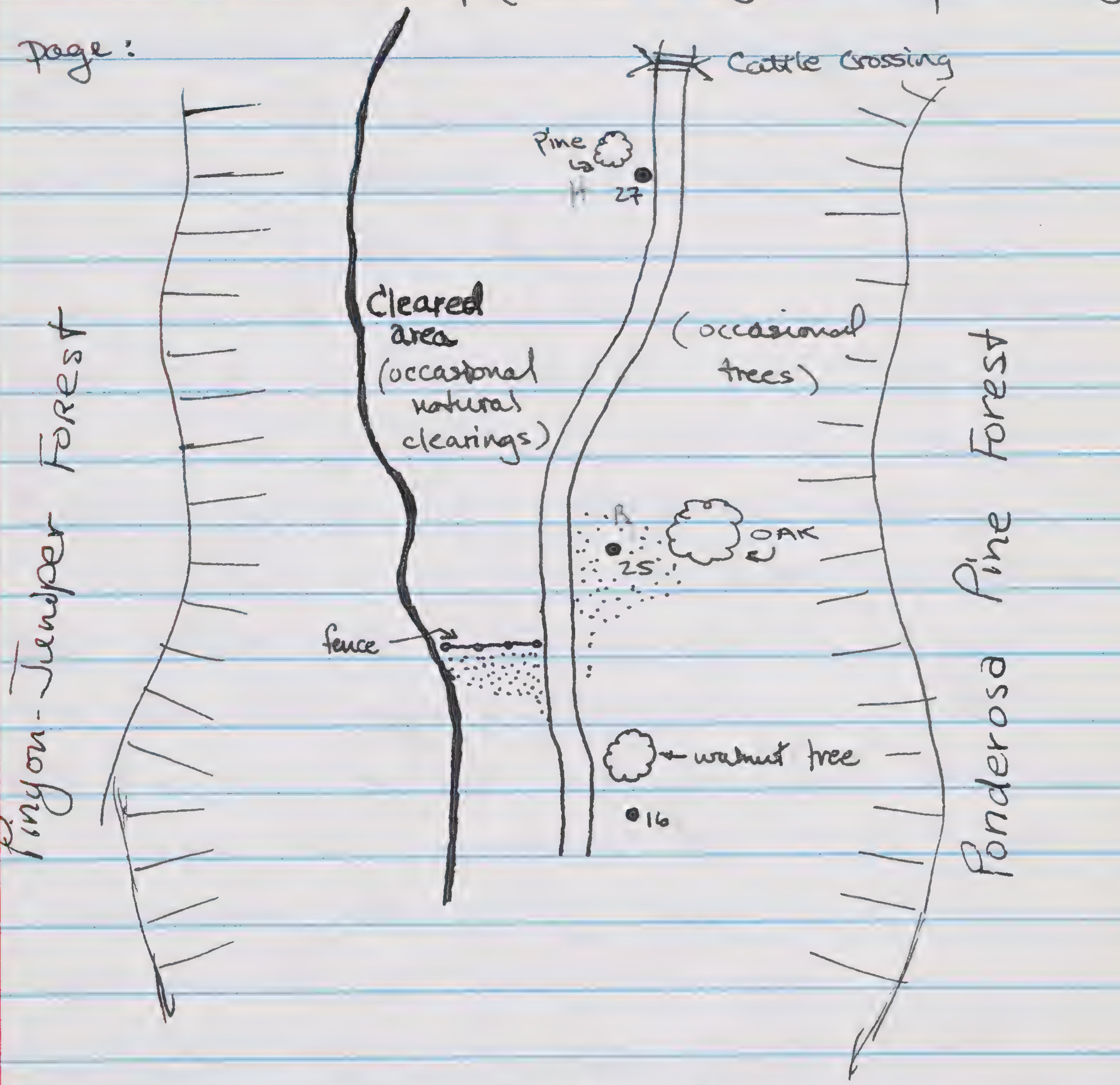
#
32
99
00
01
02
10
1037 ([illegible])
11
12
613
614
615
616
617
618
619
1038
1036 (no chrom.)
1039
1040
21-609 ([illegible])
22-1041
23-1042
24-1043
25-1044
26-1045
27-1046

Journal

Hafner, M.S.
1976

Nogal Canyon, 2.8 mi. S, 2.0 mi. W Nogal, 7300 ft., Lincoln Co., New Mexico.

17-18 August Continuation of map (northwardly) from preceeding page:



Capitan Mtns., Lincoln Co., New Mexico.

18 August 0700 arose and checked traps. - no captures. We cleared ~~un~~plugged holes and waited until 0900 before we gave-up and departed the site. We had breakfast in Capitan and drove to Nogal Canyon to check traps. We captured animals as per the map on this and the preceeding pages. Two gophers were found dead

Journal

Hafner, M.S.
1976

Nogal Canyon, 2.8 mi. S, 2.0 mi. W Nogal, 7300 ft.
Lincoln Co., New Mexico

18 August (con't) in the traps; one from exposure (MSH 609) and the other had a broken back from the trap door. The rain fell almost continually all morning and early afternoon. In total we captured 10 animals before departings for Ruidoso. 1530 – We were soaked from the rains – pulled traps and headed for Ruidoso. There was evidence of recent rain at the "Bar" locality (where we think we found an F_2 individual) – so we decided to hit this area while it's still threatening to rain. We set out traps and captured animals as per the map on the following page. Drove back to Ruidoso and camped at the Cedar Creek Campground (after getting supplies in town). Light drizzle at about midnight.

19 August Ruidoso, Lincoln Co., 6700 ft., New Mexico.
0745 Awoke and checked traps. Caught 5 gophers. Many holes were plugged – others were untouched. Heavy clouds overhead – but no rain all day. Checked and re-checked traps throughout the day, only to catch one more gopher. 1700 returned to camp. 1930 re-checked traps – caught 1 Thomomys. Fed all animals that were previously captured – 1 had died in trap.

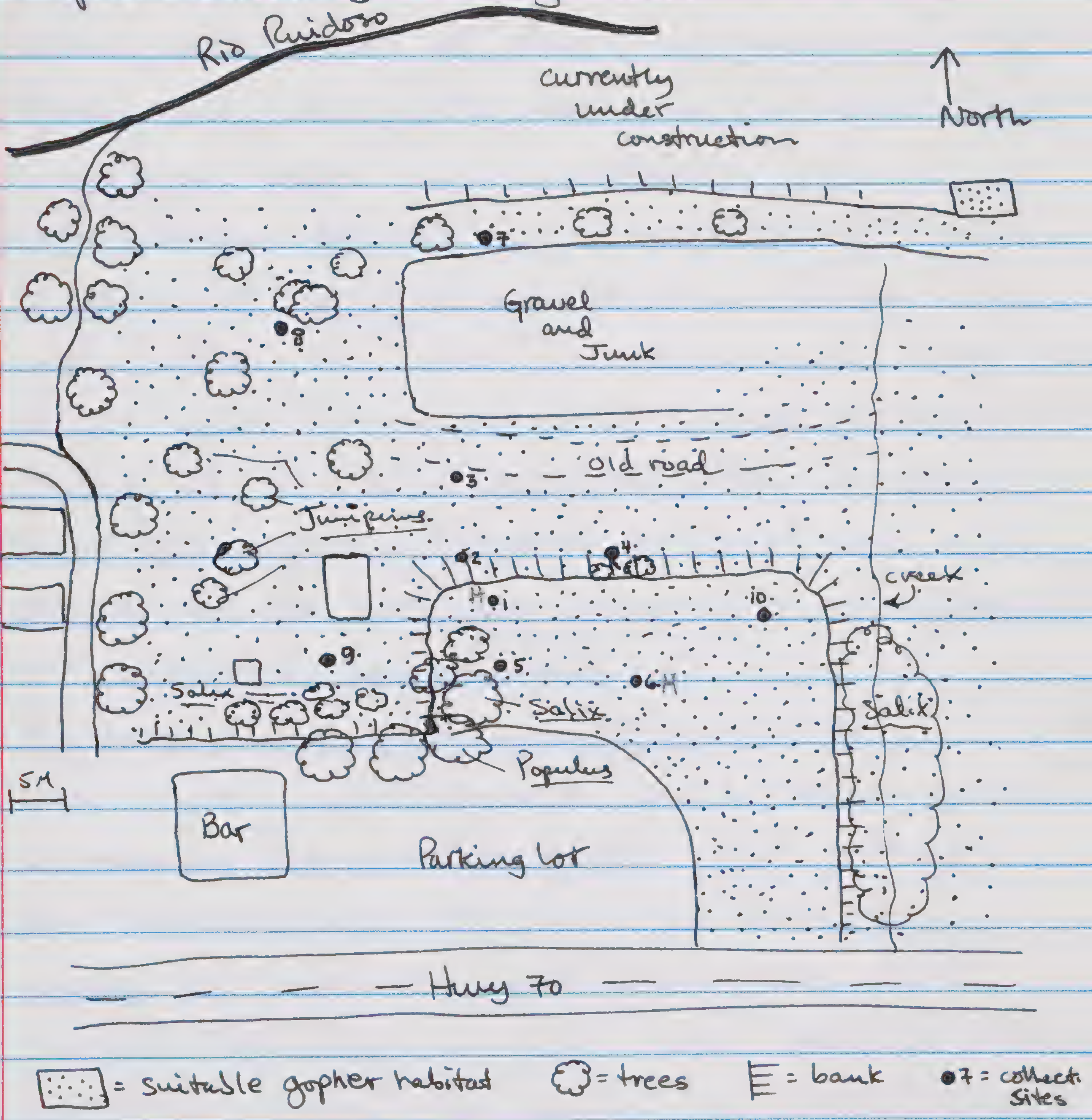
Hafner, M.S.
1976

Journal

~~3.0~~ 0.3 mi. S, 3.8 mi. E Ruidoso, 6400 ft., Lincoln Co., N.M.

18-20 August (con't)

Map of collecting locality:



19 August (con't)

Ruidoso, Lincoln Co., 6700 ft., New Mexico

2030 returned to camp, had dinner and retired — clear, cold night.

Ruidoso, Lincoln Co., 6700 ft., New Mexico

20 August

0745 awoke very cold. Drove to check traps. Caught 1 Thomomys. Most sets were plugged. We opened all holes then drove into Ruidoso (11 sets remain)

Journal

Hafner, M.S.
1976

Ruidoso, Lincoln Co., 6700 ft., New Mexico.

20 August (con't) for breakfast. 0930 checked into the "Arrowhead" motel just south of town on Hwy 70. ($14.56). Room was not quite ready so, we drove back to recheck traps — no captures.

1030 – began to set up karyotyping lab. Have 28 animals to process (19 from Nogal Canyon and 9 from the "Bar" locality near here. Ca. 1115 inject first group (6) of animals. Worked throughout the afternoon. 1900 drove to check traps - no captures. Returned to motel room and relaxed for the evening. Karyotyped 28 animals + 4 embryos = 32 animals.

Ruidoso, Lincoln Co., 6700 ft., New Mexico.

21 August 0730 awoke and drove to check traps – no captures. Returned to motel and put-up the 28 animals. 1500 drove to check traps. – again no captures, but most holes were plugged. Returned to motel and stained slides for examination. As resolution again proved to be quite difficult, we decided to leave the karyological examinations for back at MVZ and spend ~~and~~ our time taking detailed ecological measures.

1930 called home – all's well – heard Emily laugh on the phone. She's grown quite a bit in the month I've been gone.

Journal

Hafner, M.S.
1976

Ruidoso, Lincoln Co., 6700 ft., New Mexico

21 August (con't) 1930 watched part of the Raiders-Rams football game then retired early – heavy rain tonight maybe trapping results tomorrow?.

Ruidoso, Lincoln Co., 6700 ft. New Mexico

22 August 0730 arose and drove to check traps – no captures – pulled traps. Ate breakfast, then cleaned-up the motel room.

1000 drove to the "Bar" Locality (where we have been trapping for the last 2 days) and took ecological measures:

1. soil samples (from each successful hole)
2. Burrow depth – (top of burrow to surface)
3. Ground slope (approximate)
4. Tree identity
5. Proximity to trees
6. Vegetation density
7. Vegetation samples
8. approximate distance from creek.

The ecological descriptions of each successful trap site appear on the following pages in the following order:

1. "Bar" locality SE of Ruidoso (Contact Zone)
2. locality near the head of Nogal Canyon
3. Contact zone in Nogal Canyon
4. Large Meadow in Nogal Canyon
5. "Mert & Suzie's" Place in Nogal Canyon

Journal

Hafner, MS
1976

0.3 mi. S, 3.8 mi. E Ruidoso, 6400 ft., Lincoln Co., N.M.

22 August — Habitat descriptions:

(margin note, beside #5 and #1: dense > Moderately; > fairly d.; few > very few)

#5 – Large *Salix* trees (3) – 1 large *Populus* tree. Plant (A) to 0.75 M, Moderately ~~(fairly)~~ dense – level ground 2 M to *Salix* tree. Burrow depth = 150 mm.

#1 – 1 *Salix* tree – 4 M away, Plant (A) fairly dense burrow depth = 70 mm level ground – veg. fairly dense level ground – occasional ann. grasses: (Plant (B) = Fiscue ? to 1 M)

#6 – *Salix* tree 20 M away, Veg. mod. sparce; few plant (A); few plant (B), few plant (C) (*Artemisia*) to 0.75 M; Very few Plant (D) to 0.5 M; few Plant (E) to 1.2 M; Very few Plant (F) to 1.7 M ("stinging Nettle"). Burrow depth = 120 mm.; level ground. Very few (G) (*Yiethia* ?) to 1.2 M. Very few grass (H) to 1.5 M.

#10 – No trees.; Veg. dense. Very slight slope to SE. Burrow depth = 40 mm.; low *Salix* riparian assoc. ~10 M to SE – creek about 1 M wide. Mod. dense (C); fairly dense (E); Fairly dense Plant (I) to 1.2 M.; few Plant (J) to 0.5 M.

#4 – *Fraxinus* ? trees (~~Plant~~ have sample) to 5 M – 5 M away. Burrow depth = 70 mm., Veg. fairly dense.; fairly dense grass (H); very few (C); few low (0.3 M) (J); few (E). level ground 0.8 M from beginning of embankment.

#2 – No trees nearby; Veg. dense. Burrow depth = 110 mm Burrow on very slight slope at bottom of embankment. Plant (K) (wheat? grass) – fairly dense to 0.75 M.; dense low grasses to 0.3 M. Very few Plant (C). to 0.6 M.

#3 – no trees nearby. Soil gravelly (disturbed). level ground. Veg. sparce Burrow depth = 70 mm. Few Plant (L) to 0.6 M. Very few (C); Very few (F); few (H); Dense Plant (M) to 0.6 M in old roadbed near hole.

Journal

Hafner, M.S
1976

0.3 mi. S, 3.8 mi. E Ruidoso, 6400 ft. Lincoln Co., N.M.

22 August (con't) Habitat descriptions (con't)

#7 on small embankment near area of current development; level ground. Mod. dense veg.; fairly dense (H) or - (K)?; Very few (F); Very few (G), (L) and (I). Dense stand of (C) to 0.4 M. 4 M away. Burrow depth = 70 mm.

#8 - level ground, dense veg. - mostly grass (Plant (N)), fairly dense Equisetum throughout area. Juniperus 2 species: J. monosperma, J. deppeana 3 M from hole; Plant (I) very few; Very few Plant (O). Burrow depth ≈ 150 mm. Fairly dense (P).

#9 - Salix grove (to 8 M) 5 M away. level ground. Dense (very) veg., mostly grasses (Q). Very few (H); Very few (N). Very few (K); Very few (C) and (L) and (E). Burrow depth 90 mm.

General: Systems clumped. 5-6 animals within area of ≈ 1000 sq. M. Equal size areas with no animals - (too dry or too wet). Within clumps, animals are approximately 10 M apart with individual sq systems covering approx. 70-100 M^2. General habitat disturbance. Separated from Pinyon - Juniper hillsides to the N by Rio Ruidoso and separated from Pinus assoc. to the the S and W by development and Hwy.

1300 Drove via Hwy 37 to Nogal Canyon. Took photos of Canyon from vantage point on Hwy 37. Threatening to rain - clouds from the SE. Pleasant temperature, slight breeze.

Journal

Hafner, M.S.
1976.

4.0 mi. S, 3.2 mi. W Nogal, 7800 ft., Lincoln Co., N. Mexico.

22 August (con't) Habitat Descriptions: ("Pure" ruidosae habitat).

#1 - Northern-most (captured 10 August) Burrow depth = 150 mm.; 3 M from very small tree ~ 2M tall (Fraxinus? or Elderberry?) Sparse vegetation save for "lawn" of grass ~ 20 mm tall (Fiscue?). Sparse Creek (A) plant covers entire meadow. Very few Creek (B) plants. Few Creek (C) plants. Very slight NE'ly slope to ground. Very few Plant (D) (Creek) — Hole 10 M from Creek

#2 (Caught 11 August) - 20 M from Creek - very slight slope to E. Approx. 8 M from Oak (Quercus gambelii). Burrow depth ~ 120 mm. Mod. dense grasses ~ Fiscus? Very few Plant (A)

General: Meadow approx 100 x 25 M with approx. 9 gopher systems currently active. Trees include Quaking Aspen (Populus tremuloides), Gambel Oak (Quercus gambelii), little Walnut (Juglans microcarpa), Rocky Mtn. Maple (Acer glabrum), few Juniperus - both deppeana and monosperma. Pines (Conifers) entirely surround the meadow — Blue Spruce (Picea pungens) — Ponderosa Pine (Pinus ponderosa); Douglas Fir (Pseudotsuga) and white Fir (abies concolor). Other gopher systems are located in fairly dense stands of Plant (A) (Creek (A).). Rose bushes (Rosa) near creek.

1430 Drove to "Contact Zone" in Nagal Canyon. Intermittant rain all afternoon.

Journal

Hafner, M. S.
1970.

2.8 mi. S, 2.0 mi. W Nogal, 7300 ft., Lincoln Co., New Mexico.

22 August (con't)

Habitat descriptions:

All Plant letters refer to Creek samples

#1 - level ground; sparse veg. save for mod. dense lawn of grasses. Very few small (ca. 0.2 M) Plant (A); few Plant (B) to 0.5 M. Large Ponderosa Pines ~ 10 M away. Few Plant (E). Burrow depth ~120 mm.

#2 - level ground; 5 M from large Ponderosa. 6 M from ~~Juniperus deppeana~~ (small). Few Plant (B) and Plant (A). Burrow depth ca. 200 mm.

#6 - System on level ground near fallen Pine. 6 M from Creek ~~edge~~. bank (10 M from creek). Sparse veg. save sparse lawn of grasses. Few Plant (A). Very few Plant (B). Few Plant (F). Burrow depth 40 mm. (arising from beneath fallen log).

#3 - Slight sw'ly slope to ground. Burrow depth ~160 mm. Sparse veg. - lawn of grasses and annuals. Few Plant (A) - very few Plant (B). Mosses on much of soil. gambel. Oaks and Ponderosa Pines - 10 M away.

#5 - 1 meter from Juniperus monosperma. Veg. sparse save for lawn of annual grasses and weeds. No larger veg.; Many small and large Pinus ponderosa within 9 M radius. Burrow depth ca. 100 mm. Level - 15 M from river.

#8 - slight sw'ly slope. Fairly sparse veg. save for lawn of annuals (grasses, etc.). Few Plant (E) and Plant (B). Pines and oaks 10 M away. Burrow depth ca. 150 mm

(con't)

Journal

Hafner, M.S.
1976

2.8 mi. S, 2.0 W Nogal, 7300 ft. Lincoln Co., New Mexico.

Habitat descriptions: (con't)

22 August (cont.)

#4 - level ground near road cut. Mod. dense veg.. Many Plant (A) to 0.7 M. Few Plant (B) to 0.7 M. Very sparce lawn of annuals. Burrow depth 120 mm. Small pines ~ 4-5 within 10 M radius.

#10 - very sparce lawn of annuals. Fairly sparce veg. Few Plant (A) and (E) to 0.4 M; very few Plant (B) to 0.5 M. level ground. 8 M to Juniperus deppeana then large Ponderosa pines behind junipers. Burrow depth 140 mm.

Plant (C) = (D)

#9 - slight (very) swily slope. beneath large Quercus gambelii. Fairly dense veg. - Few Plant (B) to 0.6 M. Very few Plant (E) to 0.3 M. Small pines and oaks within 10 M radius. Mod. dense annual carpet. Burrow depth. 140 mm. Very few (C) .5 M away.

#7 - on top of river bank 6 M from creek. (at edge of road cut. Burrow on small hummock 0.5 M tall. Bare earth within ~ 0.7 meters of hole, but Mod. dense veg. from there-out. Dense Plant (A). Very few Plant (B). 2 New Mexican Locust trees (Robinia neomexicana) between burrow and creek. Few Large thistle Plants ~~(F)~~ #(G) to 1.5 M within 2 M of hole. Few Smaller thistle (H) near hole. Burrow depth = 170 mm.

#23 - slight slope near western edge of creek. 5 M from creek. Thick, low lawn of grasses. Other veg. fairly sparce. Few Plant (D) to 1.2 M. Very few Plants

Journal

Hafner, M.S.
1976

2.8 mi. S, 2.0 mi. W Nogal, 7300 ft. Lincoln Co. New Mexico

22 August (con't) Habitat descriptions: (con't)

Ⓐ and Ⓑ. Burrow depth = 40 mm. 6 M from small *Pinus ponderosa* ca 10 M tall; 4 M from very small (1.5 M) *Juniperus deppeana*.

#11 - level ground on "island" between fork in creek. Dense veg. Many Plant Ⓐ. Sparse very annual lawn. Few thistle Ⓖ. Small *Juniperus* 5 M away 1.5 M tall. Burrow depth ~120 mm.

#26 - on small bank ~8 M from creek. Bank almost barren, but fairly sparse veg. on level area between bottom of bank and creek. Burrow depth ~50 mm. Few Bar Ⓖ plant, (refers to Bar locality) Many Plant Ⓑ and Ⓐ. fairly sparse annual carpet. Large Pines and small locust within 15 M. Top of bank densly veg. as above (#11).

#12 - slight slope 5 M from creek edge. Very sparse annual carpet. Sparse veg. otherwise. Very few Plants Ⓐ and Ⓑ. Few small locust (*Robinia*) within 5 M (to 5 M tall). large Pine 10 M away. 5 M from road cut, Burrow depth ca. 30 mm.

#15 - fairly steep bank ca 40 M from road cut. Mod. ~~dense~~ sparse veg. Some Plant Ⓐ; few plant Ⓑ Very few low annuals - much Oak and Pine leaf litter. Burrow depth ca. 200 mm. Small pines within 6-10 M of hole - otherwise no trees. - Large *Pinus* and Oaks 20-30 M away.

Journal

Hafner, M.S.
1976

2.8 mi. S, 2.0 mi. W Nogal, 7300 ft., Lincoln Co., N.M.

2 August (con't)

Habitat descriptions: (con't)

#14 - mod. slope. ca. 2 M from road cut. Burrow located near (beneath) old root system of rotted tree (little remains above ground). Mosses on substratum. fairly sparse veg. Few Plant (A) very few Plant (B), very few Bar (G). Legume Plant (I) 2 m from hole (1 plant only). Small Pinus sp. and 1 small Juniperus sp. 10 M away - no trees nearby. Burrow depth 100 mm.

#22 - Sharp slope ca. 30 M from road cut. Sparse veg. Very few Plant (A) and (D). Much leaf and needle litter. Several small pines (to 1.5 M) nearby hole. Large pines and oaks within 15 M. Burrow depth = 100 mm. Very sparse annual cover.

#21 - very sharp slope. Very little ground veg. Much leaf and needle litter. Very small (ca. 100 mm tall and few) Oak seedlings nearby. few Small pines (to 3 M) and Oaks (to 1 M) with 5 M radius - large Pines and Oaks beyond. Burrow depth ca 200 mm. few Small ferns and mushrooms in open area.

#13 - level area - open meadow 4 M from road cut. Nearest large trees Oaks and Pines ca. 15 M away. sparse veg: few Plant (A)-(B) Occasional very small Pine seedling ca. 0.5 M tall. Mod. sparse ground cover (annual grasses). Burrow depth ca. 120 mm.

Journal

Hafner, M.S.
1978

2.8 mi. S, 2.0 mi. W Nogal 7300 ft., Lincoln Co., New Mexico

Habitat descriptions: (con't)

22 August (con't) #20 - level - in meadow ca. 15 M from road cut. Mod. sparce veg: few Plant (A) Very few Plant (B) and Plant "Bai" (G). Sparce ground cover. Occasional Mosses. Small pines (3 M) 4 M away. Larger Pines and small junipers ca. 12-15 M away. Burrow depth ca. 100 mm.

#17 - slight slope 10 M from creek edge. Sparce veg. Few Plant (A) Very few Plant (B) and "Bai" (G). Very sparce annual cover. Small pines (2) 2 M away (1.5 M tall). Larger Pines, Junipers and Oaks 7-15 M away. Burrow depth 120 mm.

#19 - level - in large meadow. Fairly sparce ground cover. Sparce large veg. Very few Plant (A) and (B). 4 small pine trees 1.5 M tall 12 M away. Larger Junipers (J. deppeana & monosperma) surround area approx. 30 M away. Burrow depth 200-220 mm.

#18 - level - meadow of SW side of Creek 10 M away. Very sparce ground cover (annual) Mod. dense veg. otherwise. (Few to Many Plant (A), few Plant (H), Very few Plant (B). Large Ponderosa 15 M away. Large Pinyon and Junipers 8-10 M away. Burrow depth 120 mm. Occasional Cholla in area.

#24 Small, level clearing 8 M from creek. Mod. dense annual cover. fairly sparce veg. otherwise. Few Plant (A). Large J. deppeana 5 M from hole;

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Hafner, M.S.
1976

2.8 mi. S, 2.0 mi. W Nogal, 7300 ft., Lincoln Co., New Mex.

12 August (con't)

Habitat Descriptions: (con't)

Other large J. deppeana and J. monosperma within 10 M. radius. Mod. size oaks and walnuts within 12-15 Meters. Burrow depth = 150 mm

#16 level — northern end of large clearing. Sparse annual veg. Mod. dense veg. otherwise. Few to many Plant (A) to 0.6 M. Few thistle (H) to 0.75 M. Very few Cholla ("Tasajo") (Opuntia spinosior) to 0.6 M. Burrow depth 130 mm. Large J. deppeana within 15-25 M away - no other trees nearby. Walnuts & Pines in distance.

#25 level - small clearing 15 M from road cut. Dense veg. Many Plant (A) to 0.5 M and Many Plant (B) to 0.6 M. Fairly dense annual cover. Burrow depth 160 mm. Large J. monosperma within 10 M. Large Pines and walnuts within 15-20 M away.

#27 - level - 3 M from road cut. Very dense veg. Much vine (Plant (J)) and much Plant (A) to 0.75 M. Dense annual cover. Large (dead) Ponderosa 6 M away. Large J. deppeana within 15 M. Few. Bar (G) to 1.2 M. Burrow depth 40 mm.

1630 - Drove to "large meadow" locality and took ecological measure for the 2 animals captured there 12 August.

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Hafner, M.S.
1976

(= Large Meadow)
2.4 mi. S, 0.8 mi. W Nogal, 6900 ft. Lincoln Co., N.M.

22 August (con't) Habitat description: (con't) Large Meadow.

#1 - level - in cleared land (not used recently. ~10 yrs ago). dense veg. ~~Many~~ few. Plant (A) Artemisia? - many Plant (K) also artemisia? few large bushes (to 0.5 M) of Plant (L). Many Plant (M) to 0.8 M. Sparse annual cover. Many Juniperus sp. re-invading area (to 2 M). Closest Juniperus 5 M away. Burrow depth 100 mm. Pinyon-Juniper woodland on both E and W hillsides. Very large Walnuts (Spanish Nogales) along creek.

#2 - small Slope 6 M from Creek. Dense veg. Many Plant (A) Few Plant (B) and Bar (F). Large Walnuts and J. deppeana nearby ~10 M away. Burrow depth 80 mm. Sparse ground cover. Elderberry bush (3 M) 8 M away. Rosa bushes in general area. Small Gambel Oaks 8 M away.

2 mi. S Nogal, 6800 ft. Lincoln Co., New Mexico

22 August (con't) Habitat description: "Mert & Suzie's Place". Slight NW'ly slope. Burrow depth 160 mm. Cleared land; Plowed each year. Many Plant Bar (G) - large yellow (sunflower-like) blossoms. Sparse veg. otherwise. few, sparse annuals. Few Plant (M). Very few Plant (L). Juniperus deppeana and Pinyon pine 10 M away.

Journal

Hafner, M.S.
1976

Nogal Canyon, Lincoln Co., New Mexico.

22 August (con't) 1700 Departed Nogal Canyon and re-fueled in Capitan. Proceeded SE'ly on Hwy 380 then Hwy 70 to Roswell. Sighted 2 dead Porcupines (Erethizon) on Hwy W of Roswell. Turned South on Hwy 285. Noted 2 dead Badgers (Taxidea) on Hwy 285 South of Roswell.
2000 turned SW on Hwy 137 and drove to the deserted shack called "Queen" on the map. Camped near "Queen" — hot-dogs & beer. Pleasant evening - slept out. —

1 mi. N, 23.3 mi. W Whites City, 5800 ft. Eddy Co., New Mexico.

23 August 0700 Awoke and drove approx. 2 mi. further on Hwy 137 to the above locality — set out all McAbee traps in a meadow adjacent to a cattle pond (and across the road). Worked traps all day; Very warm afternoon. Set up our "lab" for taking blood and tissue about mid-morning and by early evening we had 14 gophers. We decided to leave the traps out while we put-up skins.
1900 departed the above locality and drove NE on Hwy 137 back to Hwy 285. Headed South, through Artesia to Carlsbad. We ate dinner in Carlsbad (John phoned Patti - all's well). 2130 Departed Carlsbad, heading

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Hafner, M.S.
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En Route, Southern New Mexico.

23 August (con't) south on Hwy 285. Drove South, through Pecos, Texas, then turned SW on Hwy 80. Drove on to Kent, where we turned S on Hwy 118.

2400 Camped alongside the road in Upper Limpia Canyon – Nice evening – slightly cool, much dew. Noted several deer (with at least 4-point racks) along Hwy 118.

Davis Mtns., ca. 13 mi. NE Ft. Davis, Jeff Davis Co., Texas

24 August 0700 arose and drove to Hwy 17. We referred to Reichman and Baker (1972) for gopher localities – we decided that the best area for trapping was north of "zone of contact" that R and B were working on. We drove about 2 miles past their contact zone and set out ca. 15 sets apiece on the slopes near Limpia creek (see map) to the immediate E of Hwy 17. We processed blood and tissue alongside the road and by 1400 had 22 Thomomys and 1 Pappogeomys. John caught the Pappogeomys ca. 10 M from the creek (on the W side). Very hot afternoon – we departed this locality (1500) after washing-up in the creek and drove north to Balmorhea. We refueled in Balmorhea

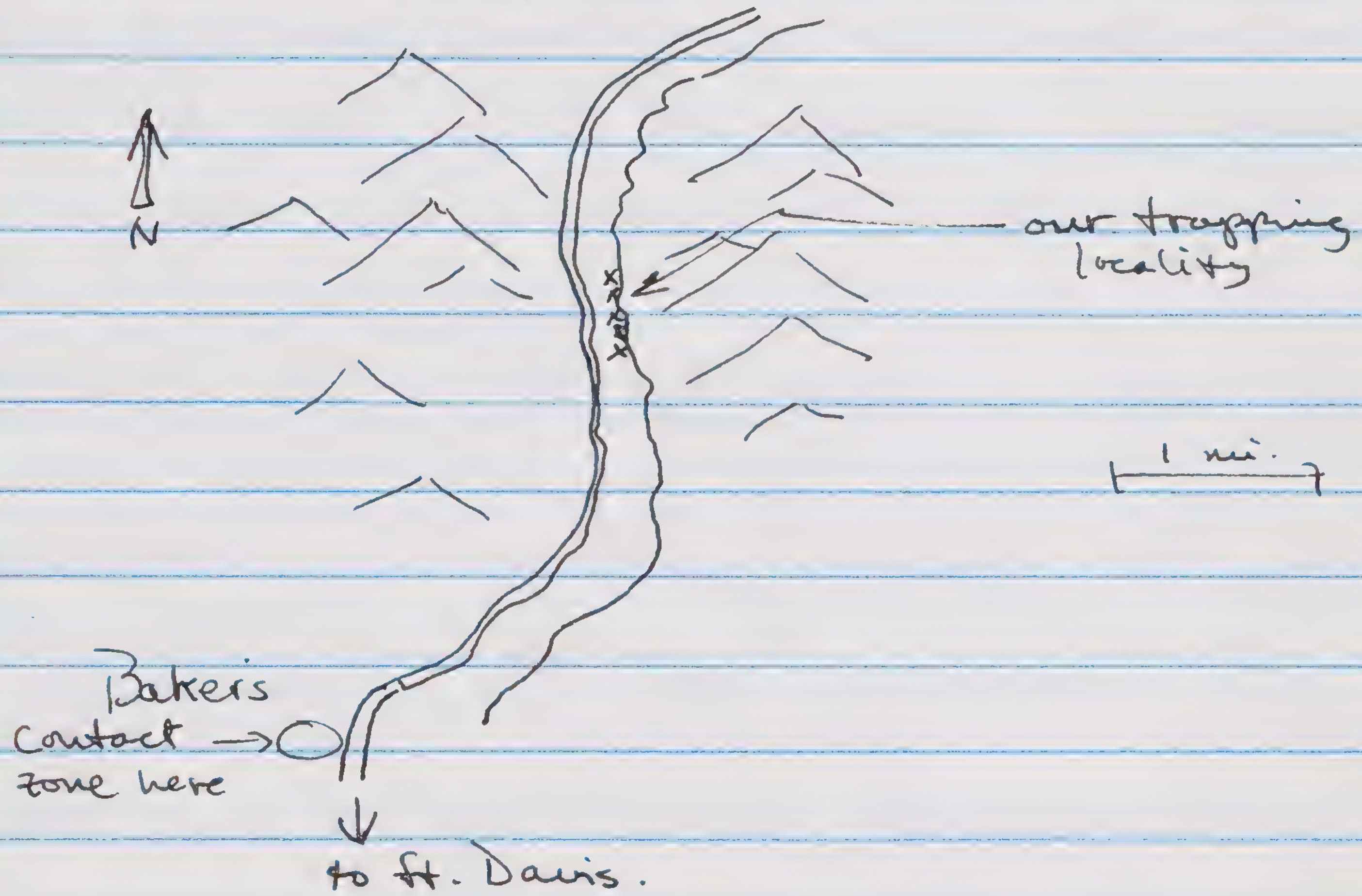
Journal

Hafner, M.S.
1976

Davis Mtns., Jeff Davis Co., Texas.

24 August (con't) and mailed in our mileage report. 1600 headed west on Hwy 80 for El Paso.

Map of trapping locality in Davis Mtns.:



1900 – Drove through El Paso to Las Cruces. Heavy thunderstorms in the NW skys. Ate dinner in Las Cruces then headed west (Hwy 80 (10)) for Deming. About 30 miles East of Deming we drove into heavy thundershowers. 2300 Drove through Deming to approx. 15 mi. W Deming where we turned off onto the old Hwy (which parallels the new Hwy) and headed east. We attempted to locate natural vegetation in hopes of setting traps for Perognathus penicillatus – one of JLP's old localities.

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Hafner, M.S.
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Vicinity ca. 10 mi. W Deming, Luna Co., New Mexico.

24 August (con't) Our hopes were to catch P. penicillatus pricei and P. p. penicillatus in contact here. We couldn't locate habitat suitable for trapping (do to Cotton fields, etc.) and because of the late hour and foul weather, no traps were set. We camped off a farm road amidst pouring rain.

Vicinity W. of Deming, Luna Co., New Mexico.

25 August 0700 awoke – drove into town where we had breakfast and put-up animals. Very pleasant, clear day considering the foul weather last night.

1400 drove to get a cash advance on my Mastercharge at a local bank. John xeroxed and mailed a manuscript to S. Williams at Texas Tech.

1600 bought groceries and drove back to Red Mtn. west of town. We made camp, took and nap, then drove to set traps.

Trapping localities:

1. 2.6 mi. S, 8.5 mi. W Deming, 4400 ft.
2. 4 mi. S, 9.5 mi. W Deming, 4350 ft.
3. 4.7 mi. S, 10.5 mi. W Deming, 4350 ft.
4. 2.2 mi. S, 14 mi. W Deming, 4450 ft.

See map following.

Journal

Hafner, M.S.
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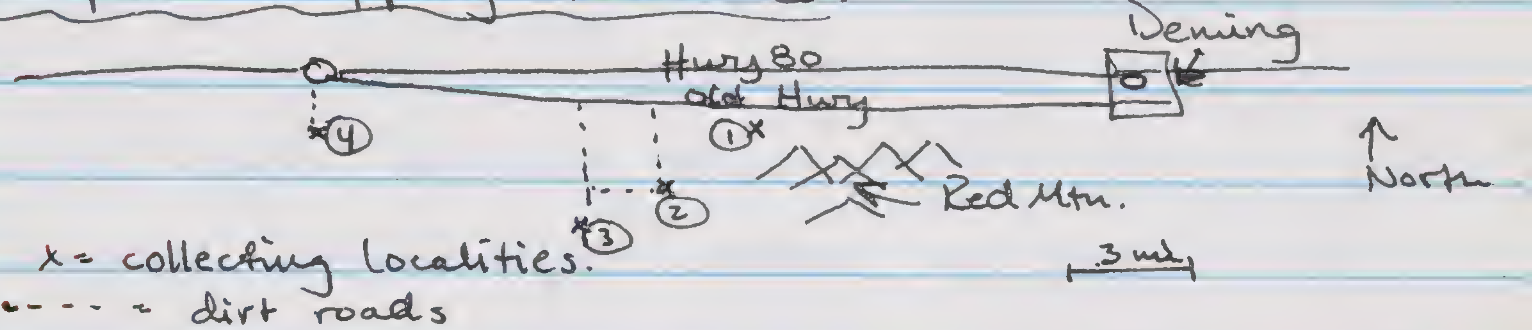
Vicinity W of Deming, Luna Co., New Mexico

25 August (con't) Map of trapping localities:



The habitat was basically Mesquite (Prosopis) with much Ephedra and occasional Euphorbia and Opuntia. There were large areas of Larrea habitat and trap site ② was in such an area - The other 3 sets were in in Prosopis habitat. 1900 called Darcey - all's well. Beautiful sunset - no clouds - warm evening. Ca. 2030 noted several Dipo's scurrying around.

2130 Drove to check 1st trap set - no captures - decided it wasn't worthwhile to check others - returned to camp.

Vicinity W of Deming, Luna Co., New Mexico.

26 August 0700 arose and checked traps: (see previous page)

Locality ①: no captures

Locality ②: 4 Dipodomys (2 ordii, 2 merriami) + 1 Peromyscus maniculatus

Locality ③: 2 Dipodomys (1 ordii, 1 merriami) 1 Neotoma lepida

Locality ④: 2 Dipodomys merriami, 2 Neotoma lepida

We released the Neotoma and Peromyscus.

Success: 12/200 traps.

We were very depressed with the poor

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Vicinity W of Deming, Luna Co. New Mexico.

26 August (con't) trapping results. Drove into town, where we put-up the Dipodomys (took blood, tissue, reprod. tracts, sperm) then, while pinning out the new specimens, we noted maggots on the drying specimens. Thankfully not too much damage was done. We drove back to camp in the Red Mtn. area where we set the skins out in the sun to dry.

1700 plinked around with the gun for awhile. Wrote-up field notes and relaxed. This whole area seems to harbor many Sylvilagus and Lepus. We noted many last evening and expect the same tonight.

1930 - drove to re-set traps in same localities ~~at~~ as last night.

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6 mi. N, 31 mi. W Hiko, 4800 ft., Lincoln Co., Nevada

17 September 1200 Barron and I departed Richmond and drove S on US. 580 then to 5, thru Tracy and onto Hwy 120. Drove over Tioga Pass -(Cool at 9,000 ft.+), then continued east on 120, through Benton, then east on US. 6. Occasional heavy clouds overhead as I crossed the Sierra, Clear to the east, however. Got a ticket just as I entered Tonopah - Speed trap!. Sun set as I departed Tonopah toward Warm Springs. Turned east on Hwy 25 at Warm Springs and arrived at the contact zone (above locality) = Penoyer Valley at 2030. Commenced to set out snap traps for stomach contents data - Battery for head lamp was dead - so set traps with the aid of the Coleman lantern. Very comfortable evening ~55° light breeze, clear. Trap setting went very slowly as many of the Museum Specials were brand new and required adjustment.

2330 - finished setting 208 Museum Specials as per the map on the following page. Had a Slight scare when Barron wandered-off and soon thereafter I heard Coyote howls quite near - Barron was alright.

There is much evidence of recent rains here. Pools in main road and the lake appears to

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Hafner, M.S.
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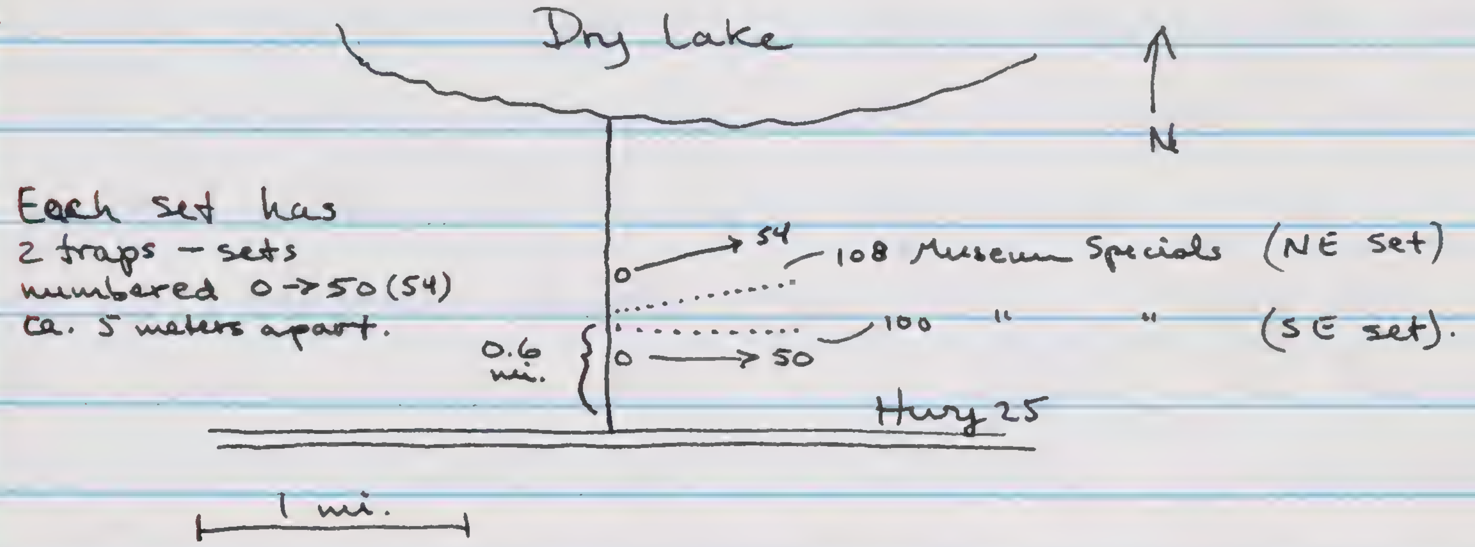
6 mi. N, 31 mi. W Hiko, 4800 ft., Lincoln Co., Nevada

17 September con't



have quite alot of water. Some annuals are in bloom. ~~1215~~ 0015 slept. — Moon rose ca. 0400. Calm, cool evening.

6 mi. N, 31 mi. W Hiko, 4800 ft., Lincoln Co., Nevada

18 September 0700 arose and checked traps. Results:

5 *M. megacephalus*
1 *M. pallidus* 9/208
2 *D. ordii* (?)
1 *D. panamintinus* (?)

The large Kangaroo Rat (presumably panamintinus) was quite scrotal. (May be large D. ordii). The Micro's were also in Reproductive condition as evidenced by enlarge testis — in one case obviously scrotal.

0800 I froze the animals for later processing and attempted to dig-up a Micro. burrow. I could not locate the burrows of any of the animals I trapped. I did manage to dig-up the system of 1 Micro — but I don't know

6 mi. N, 31 mi. W Hiko, 4800 ft., Lincoln Co., Nevada

18 September (con't) which species. Some facts about the system; It had several entrances — all of which were plugged. The soil lining the burrow - even at its greatest depth (ca. 450 mm.) was dry the surrounding "matrix" was ~~moist~~ moist. The burrow seemed to turn much more than I rembember in Dipodomys and Perognathus; ie. instead of bifurcating at a turn, the burrow would simply wind around. Dipo. burrows were generally straight lengths connected together like pipes. I followed the burrow to the soil depth, which was ca. 450 mm below the surface. I found the presumed nest chamber although there was only a small handfull of bedding - and little other evidence. I noted young scorpions and crickets. The nest chamber appeared to be ca. 60 mm in diameter and had a cache of what appeared to be Atriplex seeds in a small side pocket. I thrust my hand into a side pocket near the surface looking for more tunnels and unearthed a very large scorpion (ca. 120 mm in length.). This rather surprised me and I curtailed operations.

1000-1400 Took tissue, stomachs, reprod. tracts etc. and prepared the animals. Warm day.

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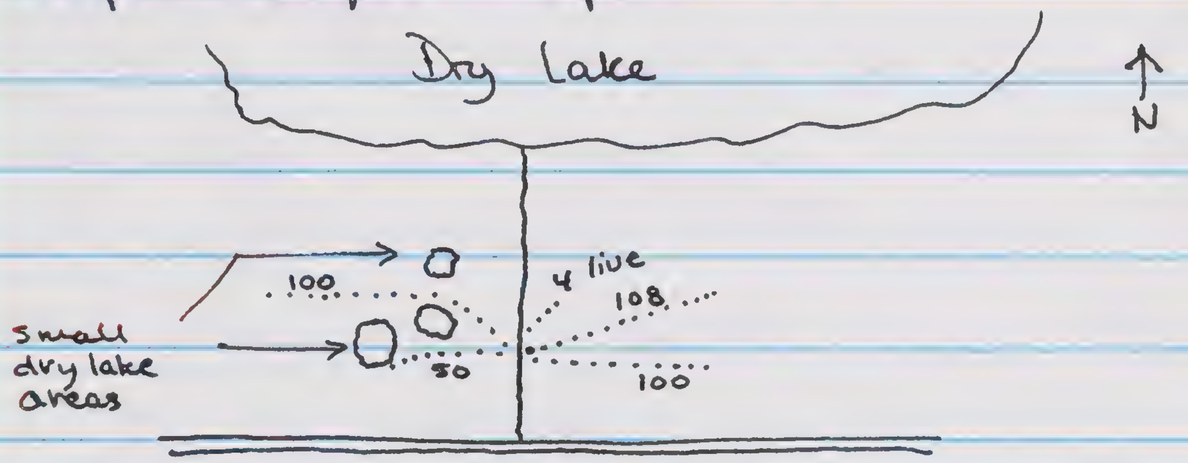
6 mi. N, 31 mi. W Hiko, 4800 ft., Lincoln Co., Nevada.

18 September (con't) comfortable in the shade — scattered clouds. (ca. 80° F). 1700 Stretched wire and prepared to set traps. Set 358 Museum Specials and 4 live traps as per map:



1930 Finished setting as darkness came. Still very comfortable (ca. 65° F). 2030 slept. Set alarm for 0100. I neglected to mention that I found 2 sherman traps near the SE line today. Probably remain from the "ill-fated" March 1975 trip. One mummified Micro..

6 mi. N, 31 mi. W Hiko, 4800 ft. Lincoln Co., Nevada

19 September 0100 arose to check traps. (night check). Results:

NW line: 6 Microdipodops (1 live)
2 Dipodomys
1 Perognathus parvus
1 Perognathus longimembris

SW Line: 3 Micros. (1 live)
1 Dipodomys
2 P. longimembris (released)

SE line: 1 Microdipodops

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Hafner, M.S.
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6 mi. N, 31 mi. W Hiko, 4800 ft. Lincoln Co., Nevada

19 September (con't) (Results (con't) of 0100 trap check):

NE Line: 1 Dipodomys
1 P. longimembris

0200 moonrise.

[Micro number MSH 683 ♂ (was captured at set: NW 45) was caught in a grassy area amidst open sand.]

0230 slept. cold night — still — clear.

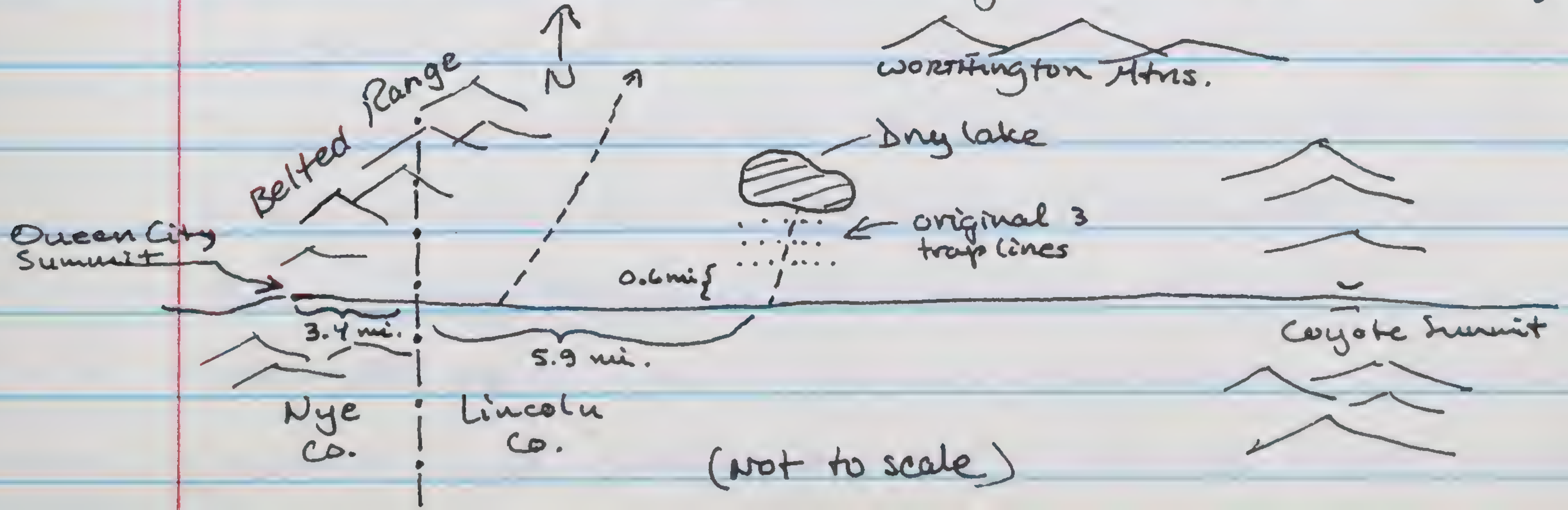
0700 arose and re-checked traps; Results:

NW Line = 0
SW Line = 0
SE Line - 1 Microdipodops (live, later died)
NE Line - 1 Onychomys torridus

[The Micro. number MSH 688 ♀ was captured at site SE 48 which was in a small lake bed.]

Apparently — little or no activity occurs after moonrise.

0800 - Picked-up all traps in preparation for trip to Sandy Summit. 0900 departed site and head west on Hwy 25 — General map of Valley:

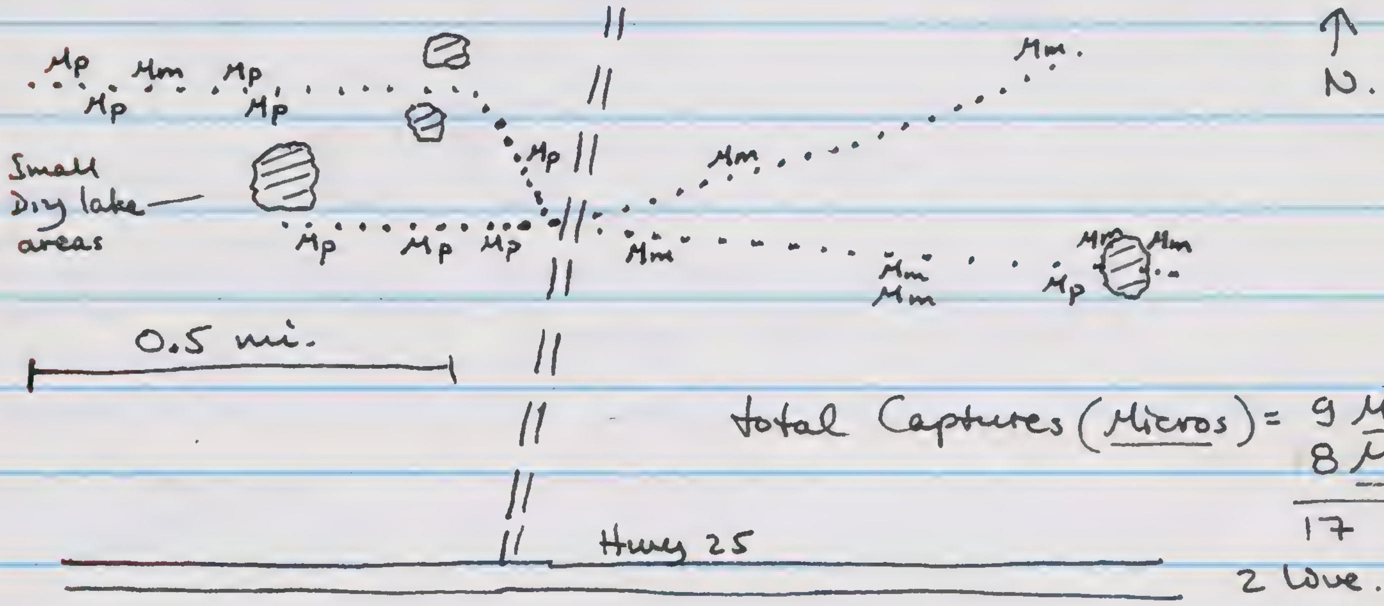


Journal

Hafner, M.S.
1976

6 mi. N, 31 mi. W Hiko, 4800 ft., Lincoln Co., Nevada

19 September (con't) Microdipodops captures for 18-19 September:



total Captures (Micros) = 9 M.p.
8 M.m.
17
2 Live.

0900 drove west on Hwy 25 to Hwy 6. Then North to Sandy Pass = 10 mi. N, 15 mi. E Warm Springs, 6000 ft. Nye Co., Nevada. I have purposely reversed the N and E to put them in correct order (see 27 March 1976).

1030-1530 Prepared specimens. There appears to be an interesting asynchrony between the species of Micros insofar as the mega. ♂♂ appear to be in reproductive condition while the pallidus ♂♂ do not.

1600-1900 set out 358 Museum Specials and 2 live traps as per the map on the following page. I purposely placed the trap lines so as to cross thru ~~po~~ both the Artemisia dominated and the Chrysothamnus dominated habitats.

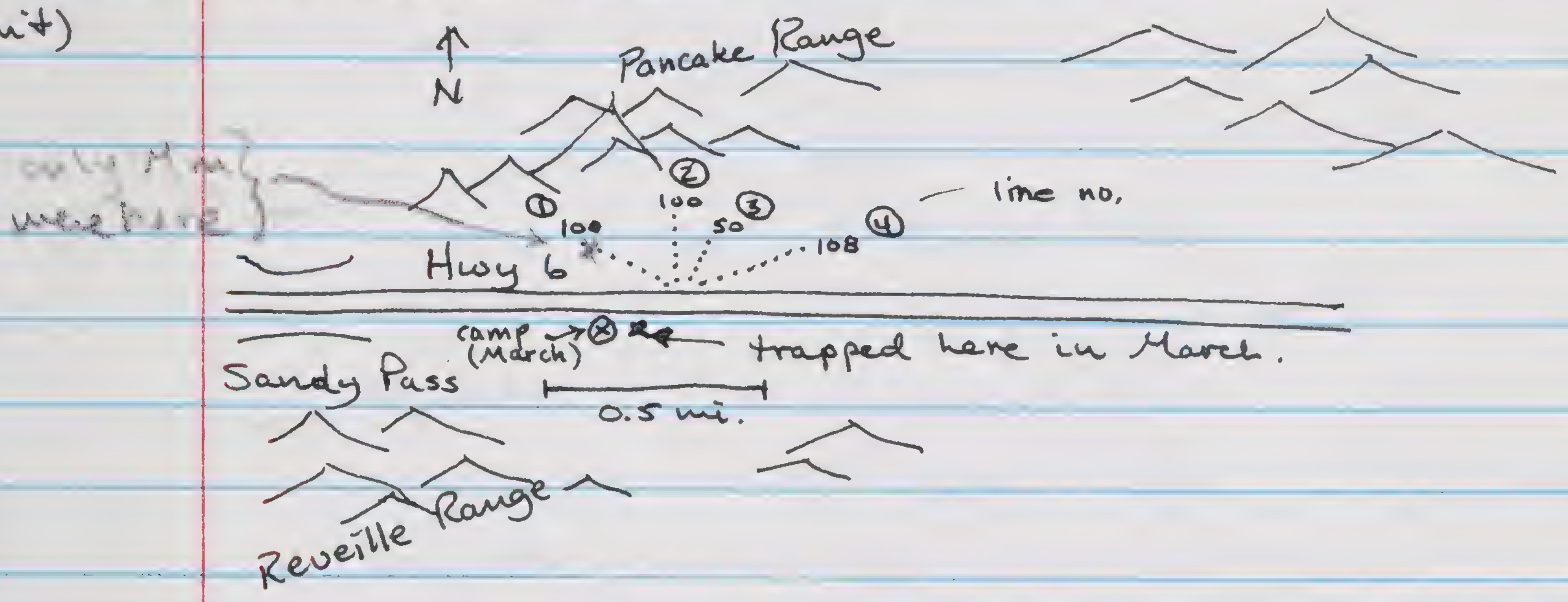
1900 - all's dark now. Pin out specimens, write-up journal and set alarm for 2300 to check traps.

Journal

Hafner, M.S.
1976

10 mi. N, 15 mi. E Warm Springs, 6000 ft. Nye Co., Nevada

19 September (con't) Map of traplines:



2300 – checked traps with following results:

Line #1 – 4 Microdipodops (1 live) later died
3 P. longimembris (+ 1 released)
2 Dipodomys sp.

Line #2 – 9 Microdipodops (1 live) later died
3 Peromyscus maniculatus
2 P. longimembris (+ 1 released)

Line #3 – 4 Microdipodops
2 P. longimembris
1 P. maniculatus

Line #4 – 7 Microdipodops
1 P. longimembris
2 Dipodomys

(kept live Micros) — Most all Micros seemed to be pallidus!

Cool, calm evening

2400 – slept.

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Hafner, M.S.
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10 mi. N, 15 mi. E Warm Springs, 6000 ft., Nye Co., Nevada

20 September 0630 awoke, checked traps again. Results:

Line #1 – 1 *Microdipodops* ♀
2 *Dipodomys* sp.
1 *P. maniculatus*

Line #2 – 1 *Microdipodops* (live)

Line #3 – 1 *Microdipodops*
1 *P. maniculatus* + 1 *Onychomys*

Line #4 – 3 *Microdipodops*
2 *P. longimembris* (1 released)
1 *Dipodomys* sp.

Total: Night check (2300): 24 *Micro's*
10 *P. longi.*
4 *P. manic.* and 4 *Dipodomys* sp.

Morning Check (0700): 5 *Micro's*
2 *P. longi.*
2 *P. manic.*
1 *Onychomys torridus*
3 *Dipodomys*

Grand total: $55/358 \doteq 20\%$

Apparently most of the activity occured before 2300 hrs. The moon rose at 0200 which may inhibit later activity – however at this and the Penoyer Valley locality I have captured a live *Micro.* in the morning in a snap trap. (by the tail.) As they usually don't live too long when caught by the tail, I assume that the animal was active just before sunrise

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Hafner, M.S.
1976

10 mi. N, 15 mi. E Warm Springs, 6000 ft., Nye Co., Nevada

20 September 0930 - finished picking-up all traps. Took tissue and stomachs (from Micros) - and tissue only from all other animals (= 50 animals) and froze carcasses.
1200 - Departed locality and drove via Tonapah, Hawthorn, Reno and Donner Pass to Richmond. Rain storms around Reno. John and Patti Hafner are collecting N of Pyramid Lake — Hope it's not raining there.

Sagehen Creek, 3 mi. NW Hobart Mills, Nevada Co. California

8 October Departed Berkeley with ~~Gatt~~ Mammalogy Class (22 students) and drove via Hwy 80 to Truckee. Turned N on Hwy 68 and arrived at Sagehen Creek Field Station. Set out various traps near Hwy 68 and Sagehen Creek at a locality 2.7 mi. N, 1.4 mi. W Hobart Mills. (10 gopher sets in meadow adjacent to Creek and 4 students set out 30 museum specials apiece in various habitats. Warm, clear day. Also set 60 Museum specials in the Chaparral hillside just east of the Hwy.
Full Moon, ca. 27°F low temp.

Sagehen Creek, 3 mi. NW Hobart Mills, Nevada Co, California

9 October Checked traps:
12 *Peromyscus maniculatus*
7 *Thomomys monticola*
3 *Eutamias amoenus*
1 *E. speciosus*

Journal

Hafner, M.S.
1976

Sagehen Creek, 3 mi. NW Hobart Mills, Nevada Co. California

9 October (con't) Captured no Microtus in grasslands.

1400 Drove via Sierraville and Vinton to a point 1.5 mi. N Chilcoot, 5120 ft. Plumas Co. Set out 200 ~~Museum~~ Sherman's and approximately 110 Museum Specials in Artemisia tridentata, Chrysothamnus habitat. Fine, ~~wind~~ windblown sand. Drove back to Sagehen Creek Station, had dinner, then returned to the Chilcoot locality. Very cool night. Moist ca. 25° low. Checked traps:

~~Museum~~ Sherman (live):
- 6 Eutamias minimus
- 7 D. ordii
- 5 Perognathus parvus
- 5 M. megacephalus
- 11 P. maniculatus

Snap traps:
- 3 D. ordii
- 1 D. panamintinus
- 1 P. parvus
- 18 P. maniculatus
- 2 R. megalotis

Returned to Sagehen creek Station and 1400 departed via Truckee and Hwy 80 for Berkeley. Very enjoyable trip — beautiful weather. Rodent densities low at Sagehen and rather high at desert (N. Chilcoot) locality.

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Nevada
Mexico
Calif

Journal

Hafner, M.S.
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6 mi. N, 31 mi. W Hiko, 4800 ft. Lincoln Co., Nevada.

24 March 0430 arose to prepare to depart for Nevada. Rainy, cold and windy in Richmond. 0520 depart Richmond and drive via I-80 through Sacramento and over Donner Summit. Much snow falling above ~3500 ft. Rain continual across central valley. 0915 arrive in Reno, get a bite to eat and head via I-80 and alternate 95? through Fallon then South to Hawthorn. Weather is cloudy now, but only scattered light showers. [Darcey, Emily, Barron, and I are in our van and Barry Lotz is following in his pick-up. The idea of this trip is to get our 3rd annual March sample of Microdipodops from the contact zone.] At 1430 arrive in Tonopah just in time to get nabbed in the God-damned "speed trap" — $12 each for Barry and I.
1500 heavy snow and dense clouds as we head NE on Hwy 6 from Tonopah. Gassed-up in Warm Springs with heavy snow falling — [very little remains on ground, however]. The fellow at the fuel station said that they'd been without rain for months! Aren't we lucky? Headed SE on Hwy 25. On

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6 mi. N, 31 mi. W Hiko, 4800 ft. Lincoln Co. Nevada

24 March (con't) and off rain and snow; Again, little is on the ground. Weather seems to be coming from the SW.

1630 arrive at above locality. No moisture on ground. Begins to rain as we set up the tent (borrowed from JL Patton). Camp is located on valley floor at trap line #1. Quite cool (ca. 40°F). I managed to set out 100 Museum specials before the "moisture" got to be too much. (part rain, part snow.) All traps are on the west half of line #1. Few animal signs noted.

1900 ate dinner and relaxed. light snowfall. 2030 walked trapline — no captures —— snowfall still quite light.

2100 retired. — cloudy, wind (ca. 10 MPH) from SW. No moon yet visible.

Awoke occasionally through night to knock snow from top of tent.

6 mi. N, 31 mi. W Hiko, 4800 ft. Lincoln Co. Nevada.

25 March 0630 awoke to snow-covered country-side. Snow ~ 1"-2" deep in places. (2°C) Moderate Cloud cover. and light breeze from NW. Checked traps — no captures. - most traps sprung.

0830 - partial sunlight through heavy clouds.

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6 mi. N, 31 mi. W Hiko, 4800 ft. Lincoln Co., Nevada

25 March (con't) 0900 - Snow cover is now melted-off. 4°C temp. Breezy, cool day - on-off light snow. Barry and I walked toward the lake - found an un-used Coyote burrow in the side of one of the larger sand dunes.

We flew the "outdoor balloon" - (5.5 ft. diameter, 87 cu ft. of helium). But we couldn't get the radio-control gear to set-off the camera at any distance over ~150'. So we just sent up the balloon w/ a 3 lb. bag of dirt attached. The balloon doesn't appear to have the lift I had hoped, but it's worth another try. We left the balloon up for awhile at about 1000 ft. alt. and later in the day we were "buzzed" by a small airplane - apparently curious as to what we were up to.

1730 finished setting out 100 more traps on the East side of the road.

1900 checked traps and caught 1 Microdipodops on the east ½ line. (caught by tail, so I brought it back for Zoo. 107 lab.).

No more snow this night.

6 mi. N, 31 mi. W Hiko, 4800 ft. Lincoln Co., Nevada

26 March 0700 awoke and checked traps. — NO CAPTURES! There was a ½ moon last night for most of the night — I certainly expected at least

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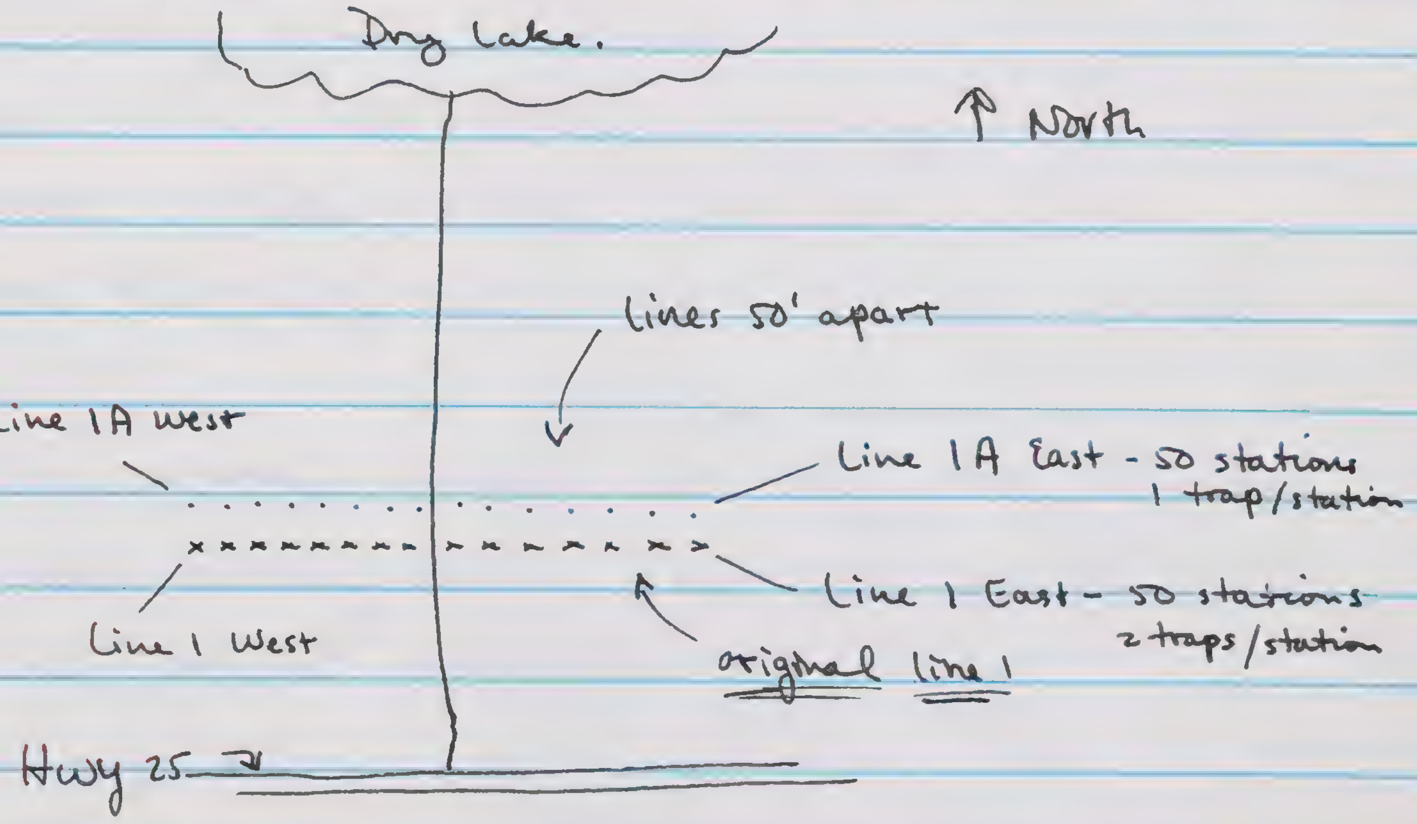
6 mi. N, 31 mi. W Hiko, 4800 ft. Lincoln Co. Nevada

26 March (con't) some Dipodomys. The ground was somewhat damp from the previous night's snowfall.

Windy day - we flew Barry's kite and put the large balloon up again. Later in the morning Darcey and I took some vegetation measures. Emily certainly takes well to the desert. She knows to walk between bushes rather than over them - good practice for snake times.

1700 I set out an additional 100 Museum specials, 50 on each side of the road parallel to the previous trap lines. (1 trap/station)



I reset the previous lines (1 East and 1 west) but did not re-bait them - a mistake I later found out. (4 of 5 animals captured were in the freshly baited traps of lines 1A E-W).

Journal

Haefner, M.S
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6 mi. N, 31 mi. W Hiko, 4800 ft., Lincoln Co., Nevada

27 March 0700 awoke and checked traps. 8° C. Calm, clear, cold night. ½ moon most of night.

2 *Microdipodops megacephalus*
1 *M. pallidus*
1 *Microdipodops* ? (may be hybrid!)
1 *Peromyscus maniculatus*

5/300 = < 2% success

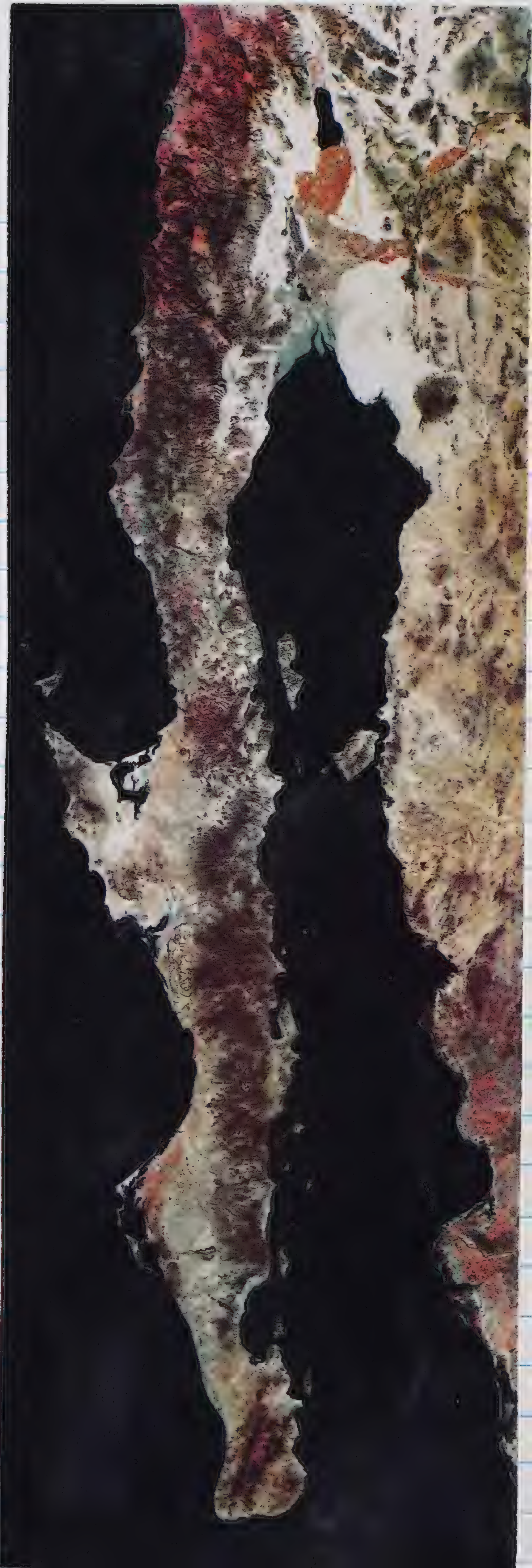
Locations of actual trapping sites for each animals are in Catalogue.

Emily was running a fever (ca. 104°+) so we decided it best to head back.

1045 - Departed contact zone. Warm and windy. Hit heavy winds around Warm Springs. (approx. 40 mi. SW of Warm Springs on Hwy 6, we noted a large buck *Antilocapra* run across the Hwy and up a canyon — large horns!.)

Very strong winds all the way home — a very tiring drive. — ~~so~~ appropriate end to a rather unsuccessful trip.

Hafner, M.S.
1977



Journal

Hafner, M.S.
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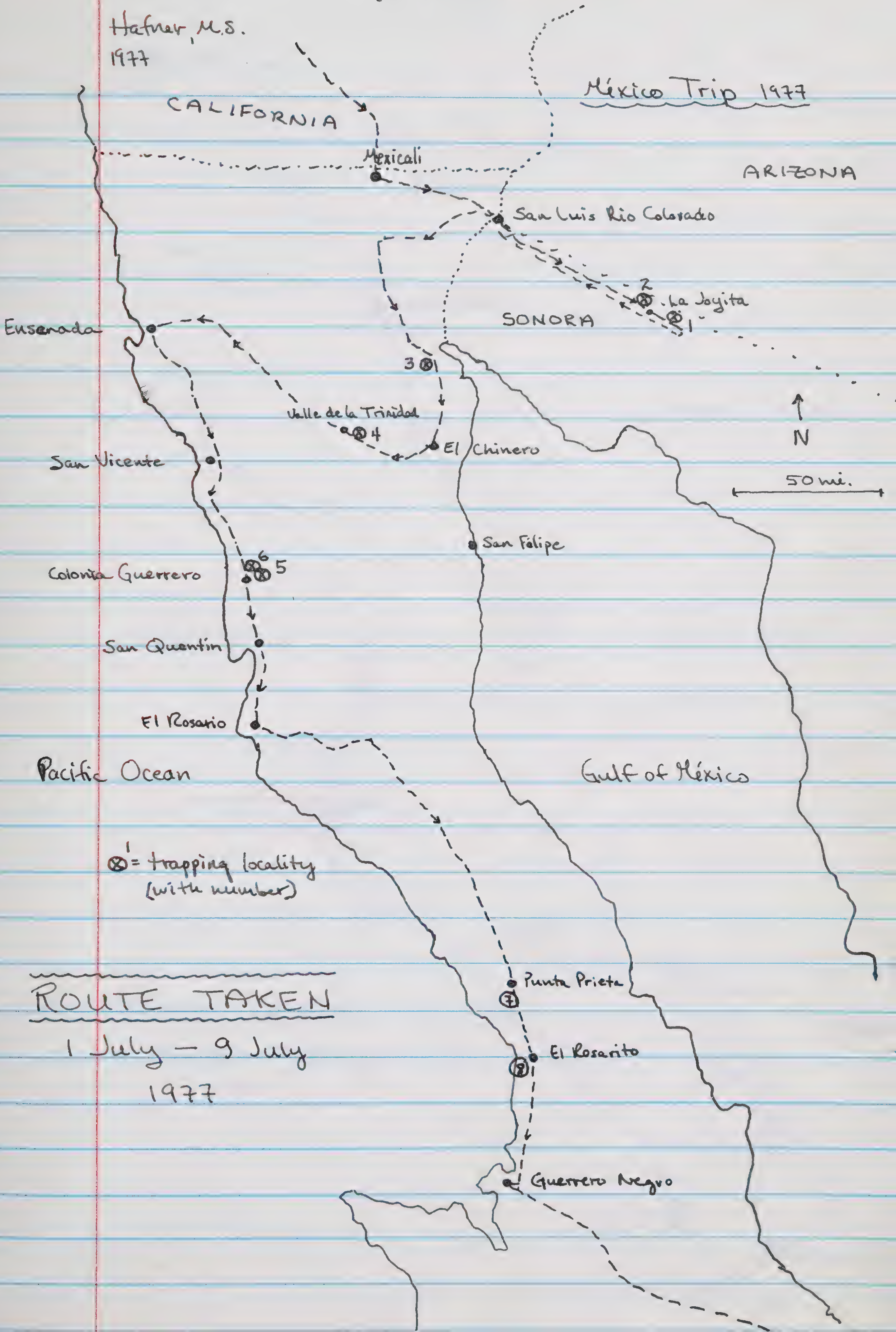

ROUTE TAKEN

1 July – 9 July

1977

Journal

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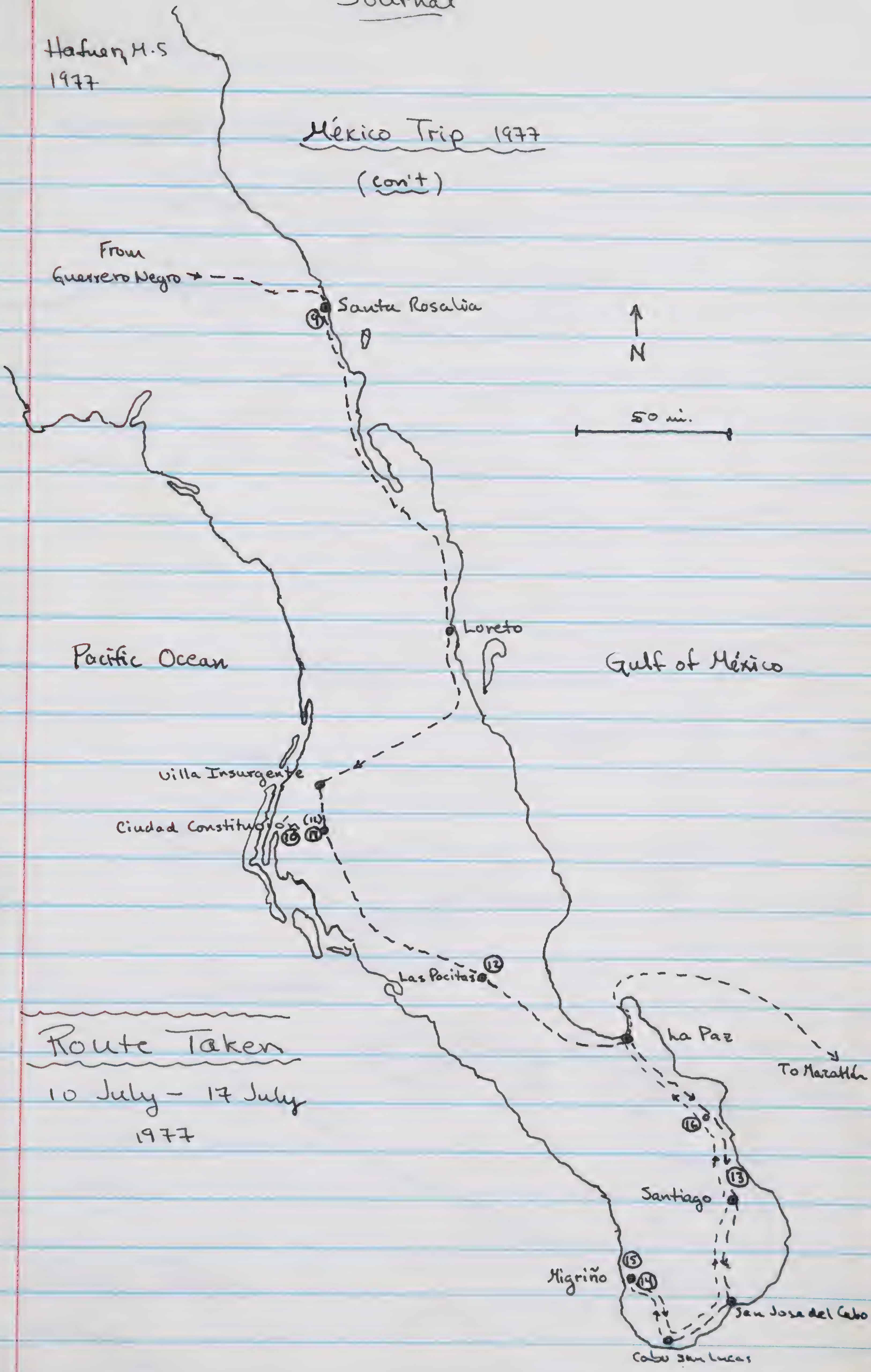
México Trip 1977
(con't)



Route Taken
10 July – 17 July
1977

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Hafner, M.S.
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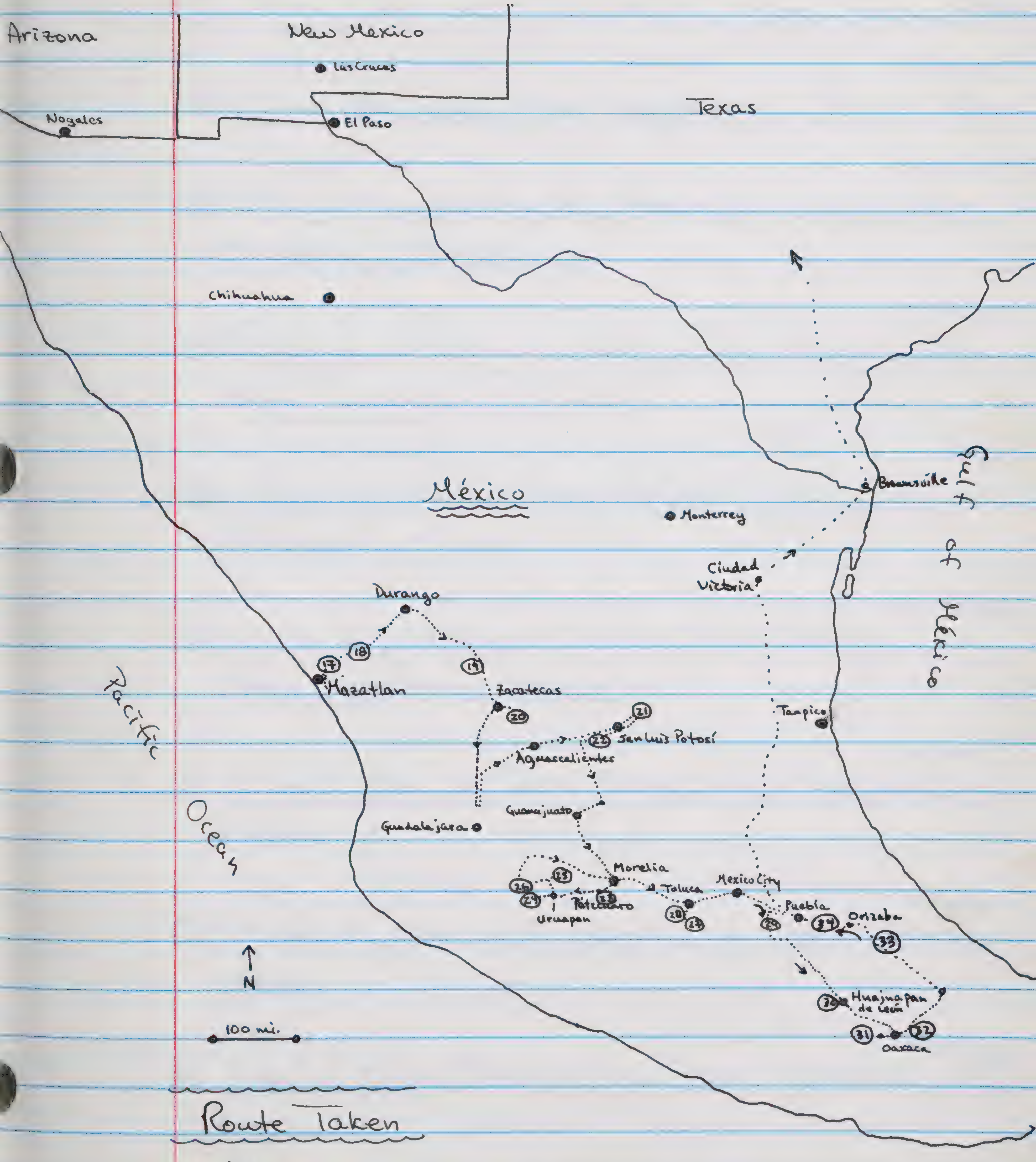
México trip 1977



Route Taken

17 July - 1977

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[numbers refer to map]

List of Localities:

1-2 July
① 1.9 mi. (by road) E La Joyita, 210 m, Sonora, México.

1-2 July
② 6.3 mi. (by road) W La Joyita, 180 m, Sonora, México.

2-3 July
③ 32.4 mi. (by road) N El Chinero, ca. 10 m., Baja California, México.

3-5 July
④ ~~3.0~~ 6.0 km. S, ~~13.5~~ 17.0 km. E Valle de la Trinidad, 905 m, Baja California, México.

5-7 July
⑤ 2.4 km. W Mission Santo Domingo, m, Baja California, México.

5-7 July
⑥ 2.4 km. S, 5.0 km. W Mission Santo Domingo, m, Baja California, México.

7-8 July
⑦ 16 km. S, 5 km. W Punta Prieta, 110 m., Baja California, México.

8 July
⑧ 4.5 km. S, 14 km W El Rosarito, 1 m., Baja California, México.

9-10 July
⑨ 3 km. S. Santa Rosalia, 10 m., Baja California Sur, México.

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List of localities (con't):

10 July

⑩ 10 mi. N (by road) Puerto San Carlos, Baja California Sur, México.

11 July

⑪ 3 km. W Ciudad Constitución, 70 m., Baja California Sur, México.

12 July

⑫ 2 km. N Las Pocitas, 110 m., Baja California Sur, México.

14 July
(Also 16 July)

⑬ 6 km. N, 10 km. E Santiago, 60 m., Baja California Sur, México.

15 July

⑭ 4 mi. SE (by road) Migriño, 80 m., Baja California Sur, México.

15-16 July

⑮ Migriño, 10 m., Baja California Sur, México.

14 July

⑯ 5 km. W El Triunfo, 380 m., Baja California Sur, México.

(see next pages for Mexican Mainland localities)

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List of Localities : (numbers refer to map)

(17) 1 km. N Siqueros, 50 m., Sinaloa, México. 18-19 July

(18) Vicinity W El Palmito, 1900 m., Sinaloa, México 21 July

(19) 10 km. S, 2 km. W Sombrerete, 2130 m., Zacatecas, México 21-22 July

(20) 3 km. N Ojocaliente, 2030 m., Zacatecas, México 23 July

(21) Ventura, 1680 m., San Luis Potosí, Mexico 25 July

(22) 11 km. N, 12 km E Arriaga, 2030 m., San Luis Potosí, México 26 July

(23) 6.5 km. S Pátzcuaro, 2200 m., Michoacán, México. 28 July

(24) 10 mi. (by road) SW Nuevo San Juan, 2220 m., Michoacán, México 30 July

(25) 1 km. N, 2 km. W Nahuatzén, 2220 m., Michoacán, México 31 July

(26) 6 km. N, 2 km. W Tancítaro, 2000 m., Michoacán, México 31 July - 1 August

(27) 18 km. S, 12 km. W Toluca, 3500 m., México, México. 2 August

(28) 10 km. S, 16 km. W Toluca, 3000 m., México, México. 3 August

(29) 5.5 km. S, 13 km. E Amecameca, 3680 m., México, México. 5-6 August

Journal

Hafner, M.S.
1977

List of Localities: (numbers refer to map)

6-7 August

(30) 5.4 mi. N (by road) Huajuapan de León, Oaxaca, México.

8-9 August

(31) Monte Albán, 1850 m., Oaxaca, México.

9-11 August

(32) La Cumbre, 2740 m., Oaxaca, México.

11-12 August

(33) 3.5 km. N, 1.5 km. W Motzorongo, Veracruz, México, 370 m.

13-14 August

(34) Boca del Monte, 3.5 km S., 3 km E Esperanza, 2450 m. Puebla, México.

Journal

Hafner, M.S.
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1.9 mi. (by road) E La Jojita, 210 M, Sonora, México.

1 July 0515 J. C. Hafner and I departed Richmond, California headed for a 2 month collecting trip in México. Drove south on Hwy 5 to Los Angeles then east on I-10. Turned south at Indio and at 1600 arrived at Calexico. Bought Insurance (for México) for 45 days at a total cost of $145.00. Crossed the border with little incident and drove east on México hwy 2, through San Luis Rio Colorado to the above locality in Sonora. Very hot day — moderate wind from the SE. As we headed east out of San Luis we encountered more and more ~~Suhuaro~~ Sahuaro cacti. The "town" of La Jojita is very small and located some 44 mi. E of San Luis. We set out 100 traps in each of the following localities:

6.3 mi. (by road) W La Jojita, 180 m, Sonora, México.

1.9 mi. (by road) E La Jojita, 210 m, Sonora, México.

The vegetation at the 1st locality was principally Larrea with Cholla and some few Sahuaro Cacti. We set traps in the gravelly sand to the north of the Hwy just as the Hwy began to enter the Penecate Mtns.

The 2nd locality (where we camped) was

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1.9 mi. (by road) E La Jojita, 210 m, Sonora, México.
1 July cont. also a basic Larrea community, but with much more Sahuaro, Mesquite, Ochotillo and 3 spps. of Cholla. We trapped in a gravelly wash about 1/4 mi. N of the Hwy.

We turned-in about 2100 — still very hot. The full moon rose at about 2100 also. We slept on the cots in the open breeze. Occasional light clouds. Warm Night.

1.9 mi. (by road) E La Joyita, 210 m, Sonora, México.
2 July 0515 arose and checked traps:

This locality:

6 D. merriami (1 released)
4 P. (intermedius?) penicillatus

10/100 = 10%

6.3 mi. W (by road) La Joyita, 180 m, Sonora, México.

1 P. (intermedius?) penicillatus
2 D. merriami

3/100 = 3%.

We prepared the animals beneath a tree alongside the Hwy.

1100 returned to San Luis and re-crossed the Rio Colorado. Drove SW to connect-up with Hwy 5. (We passed through an inspection station about 10 mi. east of San Luis — everything in order). We headed south on Hwy 5 from El Faro. Much of the land

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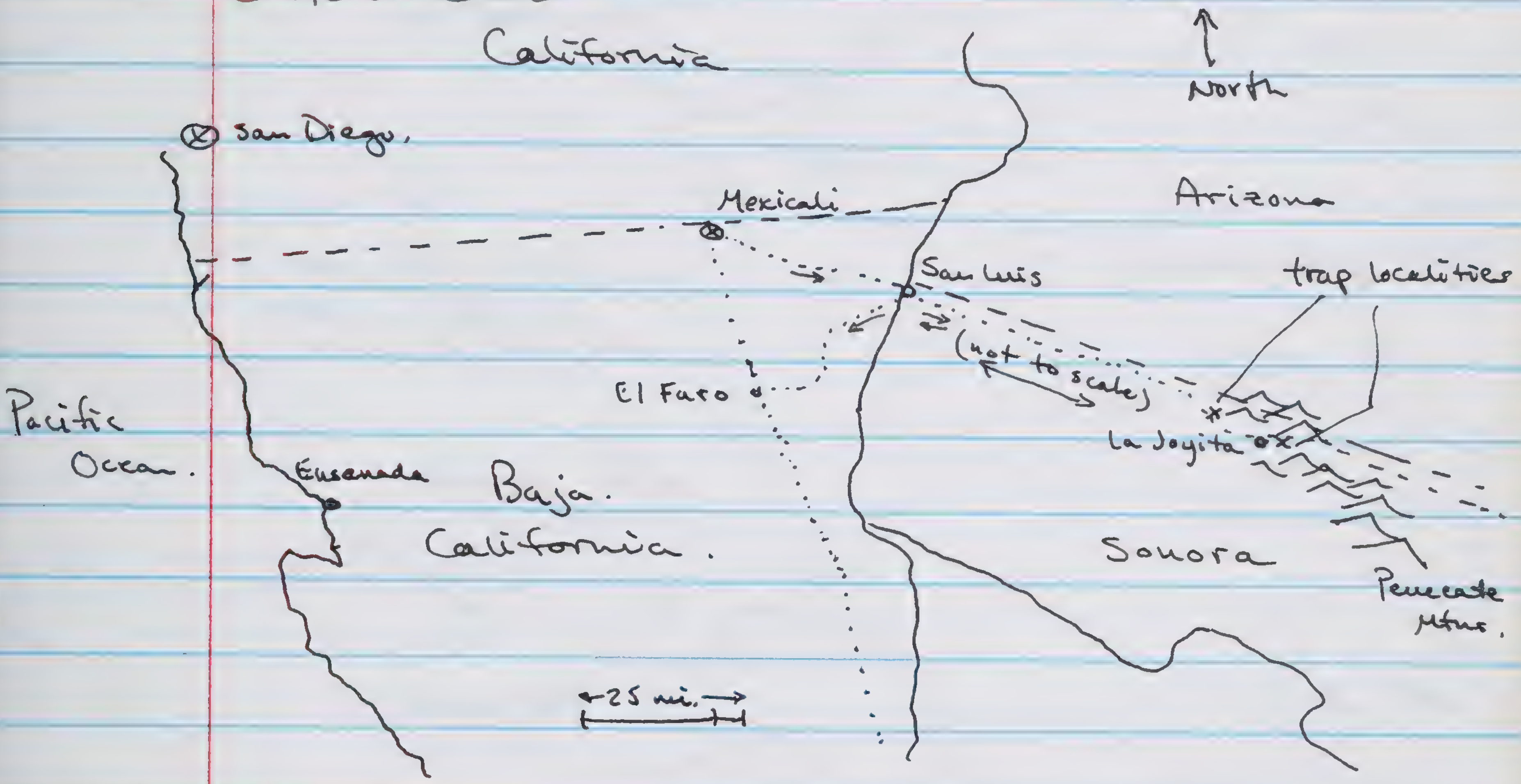
1.9 mi. (by road) E La Joyita, 210 m, Sonora, México.

2 July cont. is obviously flood basin for the Rio Colorado.

Map of Route:



I didn't mention that we changed money in San Luis – the rate is 22 pesos to the dollar. Very good rate — We bought some canned fruit nectar in San Luis (5 pesos. each very good) then continued on our way.

1600 – encountered sand dunes near road about ~30 miles south of El faro. Camped in a rocky canyon adjacent to Hwy 5 and set out exploring for bats in the nearby crevices. Found none. Extremely hot day. We set-up the awning and tried to nap – very uncomfortable.

1800 – drove to set traps. Set 4 lines of 50 traps each in the following habitats:

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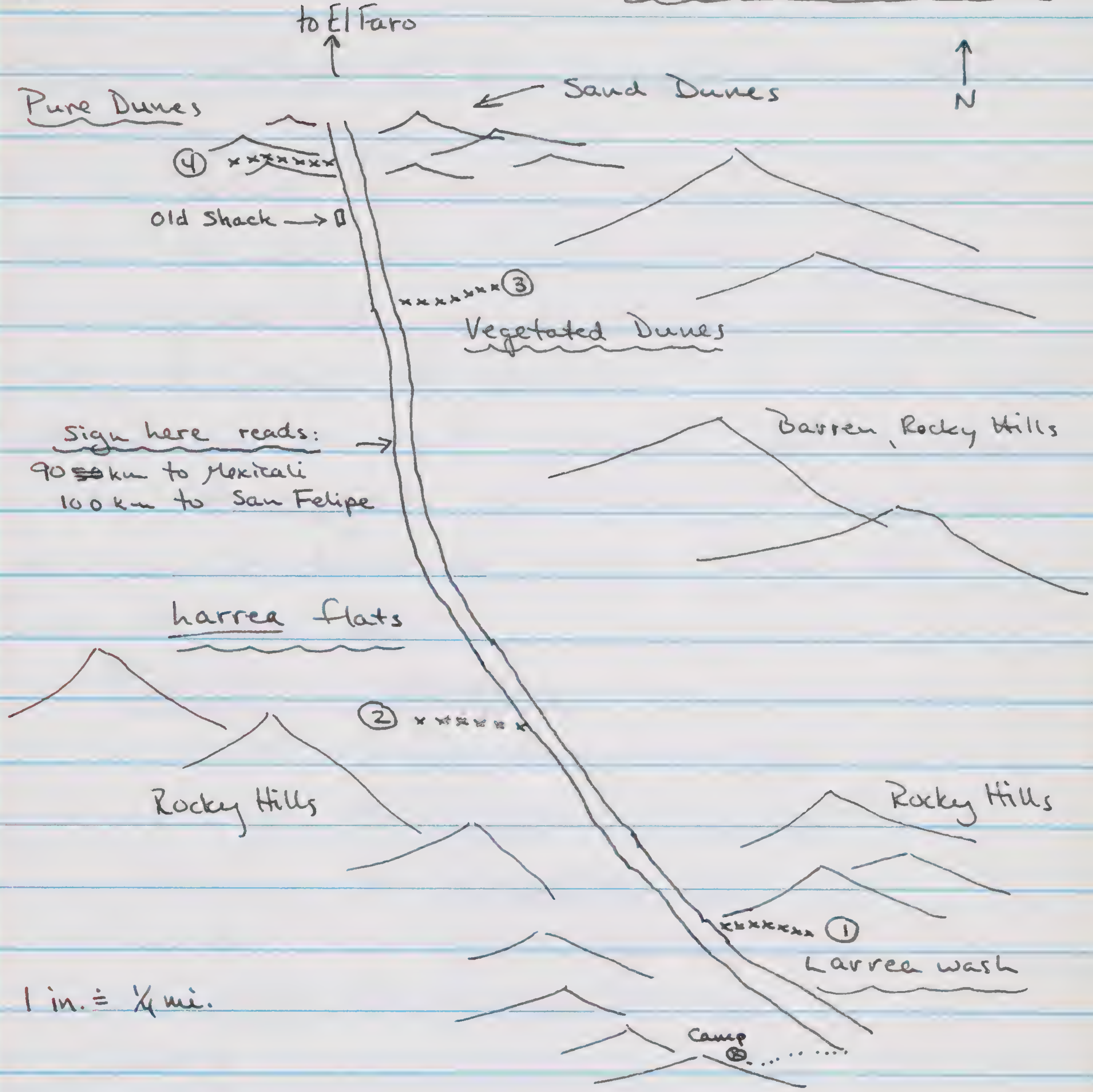
32.4 mi. N (by road) El Chinero, ca. 10 m, Baja California, México.

2 July (con't)



Line 1 - Larrea wash - sparce, rocky.
Line 2 - Larrea flats - occasional Mesquite tree.
Line 3 - Vegetated, stable dunes
Line 4 - Sparce, ± drifting dunes.

We noted several small bats (Pipistrellus?) foraging overhead as we set line #2. We drove back to camp and, after dinner, retired early. Very warm, muggy night — slept w/o a bag.

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Hafner, M.S.
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32.4 mi. N (by road) El Chinero, ca. 10 m., Baja California, Mexico.

3 July It clouded-up around sunset and we heard thunder all through the night. A wind picked-up around 3AM and very soon after it began to sprinkle. The rain stopped within minutes and we were able to relax. 0530 Arose and broke-camp. Began to rain as we drove to check traps. Rain on-and-off all AM.

Results of trapping:

Line 1 — 6 Dipodomys merriami
Line 2 — 4 Dipodomys merriami
3 Perognathus sp.
Line 3 — 6 Dipodomys merriami
4 Perognathus sp.
Line 4 — 6 Dipodomys deserti
1 Perognathus sp.

30/200

We saw 2 bats again foraging near a large Mesquite tree on Line 2. The D. merriami were much smaller and lighter in color than those of the Mojave Desert. We kept a sample of D. merriami and all other specimens. The pocket mice are probably all penicillatus — we had hoped for baileyi and/or

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Hafner, M.S.
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32.4 mi. (by road) N El Chinero, ca. 10 m., Baja California, México.

3 July (con't) P. arenarius. Since it is still cool in the AM, we elected to drive to the mountains ~~to~~ before preparing the specimens. We headed S on Hwy 5 and reached El Chinero about 0800. We filled-up on gas - (the old-fashioned type of pump) ~~28~~ 2.8 pesos/liter, then drove west on the dirt road from El Chinero to Valle de la Trinidad. About half way to Valle de la Trinidad the road was being paved, so we were able to have a smooth 2nd half of our journey. We ascended over San Matías Pass (about 3200 ft. elev.) around 1000 hours and passed the tiny Village of San Matías. We stopped at a point 11.6 mi. (by road) E of Valle de la trinidad. on the main road. There were numerous gophers on the road-cut and we began to trap (after we finished preparing this morning's catch).

We each set out approx. 12 gopher sets and the animal slowly began to trickle in. There was a slight overcast now, making the hot day bearable. The gophers were apparently also active at this time (1400). 1700 the trapping success began to slow down so we left the traps ~~ad~~ and drove into Valle

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Hafner, M.S.
1977

~~3.0~~ 6.0 km. S., ~~13.5~~ 17.0 km. E Valle de la Trinidad, 910 m., Baja California, México.

3 July (con't) de la Trinidad. We noted a place to get Potable H_2O and bought some fruit juices, vegetables (for live animals) and some Cervesas for later. The town, like most towns we've passed through, is miserably poor — mere windowless shacks and Ochotillo fences. Old junk cars everywhere. The town has at least 1 store and a few old broken-down restaurants. — also a "modern" bank is being built at the west end of town. The streets are dirt and filled with gullys and ditches.

The Valle de la Trinidad is a beautiful Valley — it lies E-W and is quite long. The surrounding hillsides have barrel cactus and a few Pinyon + Agave Junipers. ~~(Mesquite)~~ Acacia? dominates - as on the valley floor. Much of the valley is currently in agriculture, however.

We returned to camp ~~at~~ and set-out 200 sherman traps in the Mesquite - Cholla association to the north of the road. The soil's surface is filled with holes belonging to at least 2 species of ground-Squirrels (Ammospermophilus leucurus and Spermophilus

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Hafner, M.S.
1977

~~3.0~~ 6.0 km S, ~~13.5~~ 17.0 km. E Valle de la Trinidad, 910 m.
Baja California, México

tereticaudus) and probably kangaroo rats — we ~~were~~ are however most interested in pocket mice. We crashed about 2100 and slept rather poorly through a quite cool and damp night. We have a total of 9 gophers, so far. [John caught 1 Ammospermophilus later in the AM.]

~~3.0~~ 6.0 km. S, ~~13.5~~ 17.0 km. E Valle de la Trinidad, 910 m, Baja California, México.

4 July. 0515 arose and checked traps:

	60	*Dipodomys agilis*
	37	*Dipodomys merriami*
Success:	6	*Peromyscus maniculatus*
103/200	103	

Later in the day: 6 Spermophilus + 2 Ammospermophilus

We released all but a sample of each kangaroo rat species. We elected to leave the traps out for the morning (while we trapped for gophers) in order to capture some ground squirrels.

0830 - already quite warm. We prepared this morning's specimens. 0900 as I was walking the trap lines (sherman traps) I discovered that the last 20-30 traps of one line of 50 were missing. We heard voices and saw some young children leading a ~~heard~~ herd of

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Hafner, M.S.
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~~3.0~~ 6.0 km. S, ~~13.5~~ 17.0 km. E Valle de la Trinidad, ~~90~~ 910 m, Baja California, México.

4 July (con't) goats through the area. They, of course, knew nothing of our missing traps. John scouted around for awhile and found the traps about 1/4 mi. away stashed neatly inside the leaves of an Agave. I later found 3 traps also stashed away [to be picked-up later]. In total we lost only 2 traps — very lucky.

All day long, people with goat herds passed through the area. After capturing 4 *Spermophilus tereticaudus* and 2 *A. leucurus* we pulled all the sherman traps to avoid further loss. (1300). Today was especially hot - no cloud cover as yesterday. We worked the MacAbee traps all day with little success. John captured 2 gophers alive which were kept for karyotyping later.

1800 we put-up the gophers we had captured yesterday and this AM. We then set out more McAbee's and drove into town for water and beer.

2100 retired after setting out 20 Sherman traps, it a rather weak effort to capture an *Onychomys* we heard calling. Sounded rather unlike the *Onys* I'm used to. Cold night, but not as wet as last night.

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Hafner, M.S.
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6.0 km. S., 17.0 km E Valle de la Trinidad, 910 m, Baja California, México.

5 July 0515 arose and checked Sherman traps:

12 *Dipodomys agilis*
2 *Dipodomys merriami*
1 *P. maniculatus*
15

Success: 15/20

We released all animals as we had the samples we needed already. We had decided last night to leave the Macabee traps out all night to measure the nocturnal activity of the gophers. We each had about 14 sets out and only had 2 animals this morning – i.e. not much nocturnal activity. We continued our effort throughout the morning to capture at least 20 gophers for a proper electrophoresis sample. By 0900 we had 21 gophers, and after preparing these specimens we headed west. The animals of this community formed what seemed to be a rather unusual association: 2 species of groundsquirrel – similar in size and general ecology; 2 species of kangaroo rats – also rather similar in size and general ecology and 2 species of cricetine rodents (*Onychomys* and *Peromyscus*) roughly similar in size and ecology. Apparently there are no pocket mice here. (?).

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Hafner, M.S.
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6.0 km. S, 17.0 km. E Valle de la Trinidad, 910 m., Baja California, México.

5 July (con't) 1000 – we headed NW on the main road (good, paved road) from Valle de la Trinidad toward Ensenada. We had hoped to take the road to San Vicente but were advised that the road was only for 4-wheel vehicles. Reluctantly we drove the long way around, through Ensenada. Ensenada was much as I remembered it from 1970: Dirty, wind-blown town. We fueled-up, bought some juices then headed south from Ensenada on Hwy 1. A pleasant, cool trip down the coast, passing through numerous small, run-down villages.

1600 arrived in the town of Colonia Guerrero very near the type locality of Dipodomys gravipes. We scouted-around ~~at~~ until we finally found the ruins of Mission Santo Domingo about 6 miles from town. We decided upon localities that we wanted to trap – either tonight ~~at~~ or tomorrow night – Then headed back into town and checked in at the "Motel Sanchez". We got a very nice room – twin beds, shower, etc for 200 pesos ($9.00)!!! We karyotyped 10 specimens and took tissue and blood from a total

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Hafner, M.S.
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Colonia Guerrero, Baja California, México.

5 July (con't) of 16 specimens. We decided not to put-up the specimens until tomorrow, and since it was already almost dark, we put-off trapping until tomorrow night — we figured we'd use tomorrow to catch-up on everything.
2000 - we drove south to the outskirts of San Quentín where found a "nice" restaurant for dinner - actually a rather shabby place, but the best around. We each had the biftek con papas dinner (30.00 pesos = $1.25) and a few beers — very good food. We avoided the vegetables, but sure enjoyed the rest. The steaks are typically pounded to about 1/4" thickness (to tenderize) — still very tasty.
2130 we drove back to Colonia Guerrero, showered and retired.

Colonia Guerrero, Baja California, México.

6 July. 0630 arose late this morning — we needed the rest and we didn't have any traps to check. We spent the AM preparing skins.
1330 we cleaned up the room and headed just outside of town to find the localities for ~~trapping~~ tonight (and finishing our catching-up). We camped on a low,

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Hafner, M.S.
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2.4 km S, 5.0 km W Mission Santo Domingo, 30 m, Baja California Mexico.

6 July (con't) rocky knoll north and east of Colonia Guerrero (S and W of Mission Santo Domigo). We spent the rest of the afternoon writing-up note, drying skins & skulls and just relaxing. I tried to key-out some of the vegetation, but was fairly unsuccessful using JLP's "Flora Méxicana" (Many of the Baja California plants are not included in the Flora).

1930 - set traps (100) in the above locality. Vegetation is basically low chaparral with Rathbunia cactus — rather sparse, rocky habitat - much rodent activity. We noted several woodrat nests in the area; nests were built of Cholla piles.

2000 - drove toward Mission Santo Domingo and set traps (100) in a sandy wash 2.4 km west of the mission. The vegetation was basically Artemisia tridentata some Ephedra with another dominant looking much like Artemisia californicus — athough I know it's not. Somewhat shinier than A. californicus. The plants were rather lush and dense in places - fine sand in most places.

2030 we drove into town for dinner. Went to a "fancier" place and really paid

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Hafner, M.S.
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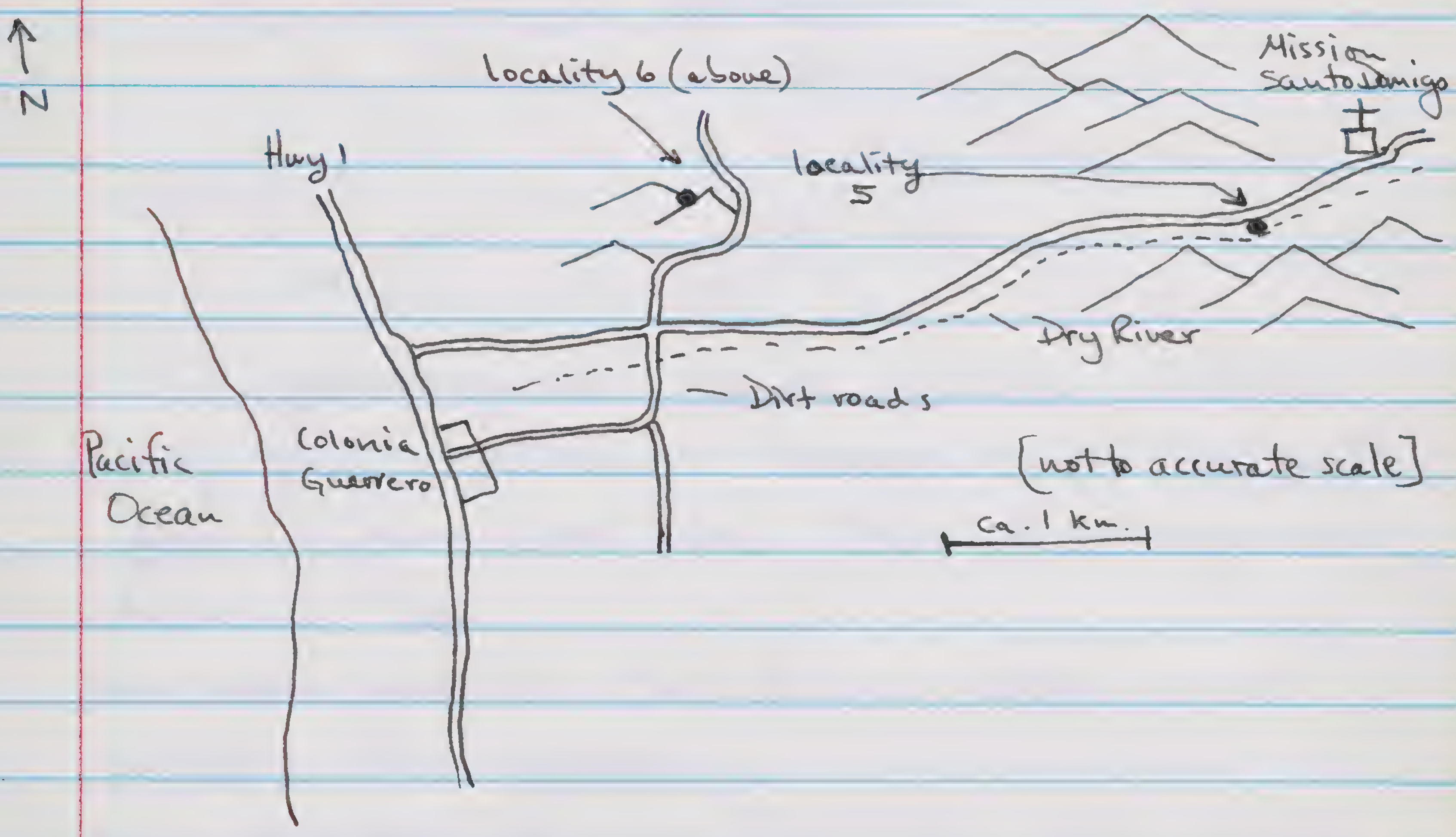
2.4 km. S, 5.0 km W Mission Santo Domingo, 30 m.,
Baja California, México.

6 July (con't) for it - the same meal as last night, but for twice the price. Drove back to camp and retired 2200. 2230 Heard *Onychomys* calls.

Map of collecting locality:



2.4 km. S, 5.0 km W Mission Santo Domingo, 30 m.,
Baja California, México.

7 July 0530 arose and checked traps at this locality.

9 *Dipodomys* (*gravipes* or *agilis*)
5 *Neotoma*
1 *P. maniculatus*
15

success: 15/100

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Hafner, M.S.
1977

2.4 km. S, 5.0 km. W Mission Santo Domingo, 30 m., Baja California, Mexico.

7 July (con't) We kept the Dipodomys then drove to the locality near the mission (which is, by the way, merely ruins now — built in 1775).

2.4 km. W Mission Santo Domingo, 22 m., Baja California, México.

Results: 8 Dipodomys
1 P. maniculatus
1 Neotoma
10

Success: 10/100

I picked up a Vulpes macrotis skull in very good condition — according to Hall and Kelson there are very few records of Kit-foxes in Baja.

We drove back to the first locality and prepared the Dipodomys.

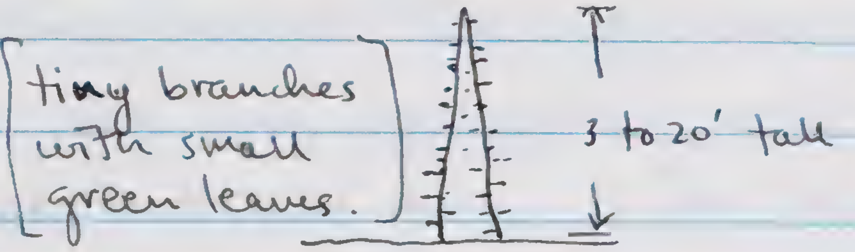
1000 - departed this locality and drove south on Hwy 1. The habitat began to change conspicuously as we headed east of El Rosario. We encountered thicker-and-thicker stands of Cardón and eventually more and more Boojum Trees (Idria columnaris). This is a very strange relative of the Ocotillo ~~which~~ and we stopped about 30 miles east of El Rosario to photograph ~~and~~ a particularly nice one. The tree looks

Journal

Hafner, M.S.
1977

En Route: Colonia Guerrero to Punta Prieta, Baja California, México.

7 July (con't) amazingly like an upside-down growing carrot.



We later encountered numerous Elephant trees (Bursera) as we entered the rockier country about 60 miles SE of El Rosario. [The Hwy is in rather fine condition — always very narrow and numerous pot-holes.] By the way, the elephant trees are named for their rather large tree bases resembling elephant feet.

1500 entered Punta Prie~~p~~ta — nothing much of a town. Drove South on Hwy 1 to a point 6.6 mi. (by road) S. Punta Prieta (just before the road begins to climb through a hilly area) — where we turned west on a dirt road. We drove to Rancho Bachandrés where we got directions to the town of San Andrés — which, as far as we could later determine, doesn't exist. Anyways, we continued S and W on the dirt roads until we reached a sandy river wash fairly dense with Mesquite trees. We

Journal

Hafner, M.S.
1977

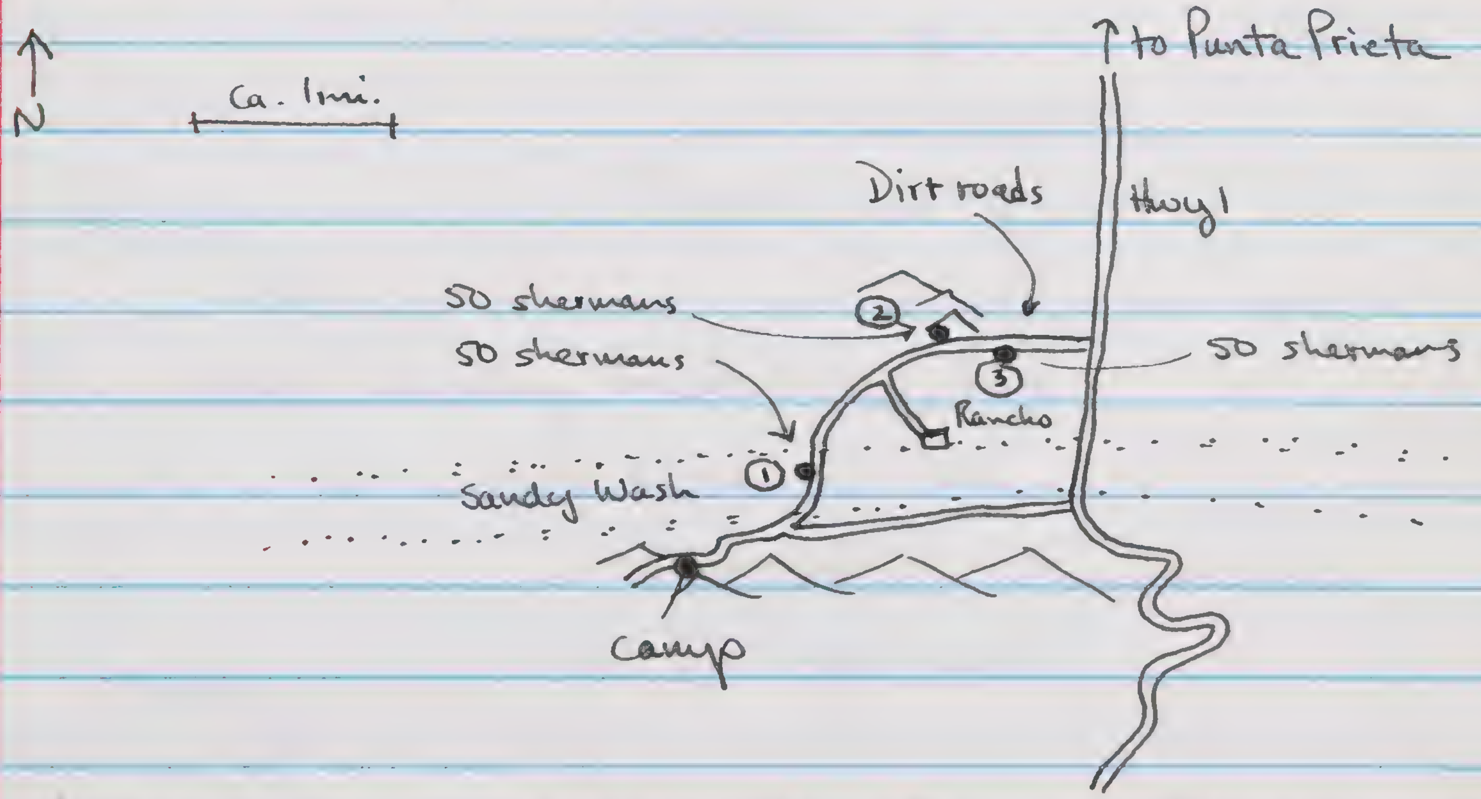
<u>16 km. S, 5 km W Punta Prieta, 110 m. Baja California, México.</u>

7 July (con't) noted signs of gophers, so we began to set-out MacAbee traps. The soil was <u>extremely</u> powdery and the sun <u>quite</u> hot, making a very uncomfortable time. The gophers, as it turned out we very sparce. John finally captured (both in MacAbees):

1 <u>Thomomys bottae</u>

1 <u>Dipodomys peninsularis</u>

1800 We finally decided to move to a better locality (for Gophers) tomorrow. We began to set out sherman traps according to the following map:



A total of 150 traps – line ① was in the sandy Mesquite wash; line ② was in the ~~roc~~ rocks of a small hill (around which the road skirts) and line ③ was in the desert flats.

Journal

Hafner, M.S.
1977

16 km. S, 5 km W Punta Prieta, 110 m, Baja California, México.

7 July (con't) 2030 we drove to a rocky knoll with a nearby spring. As it got darker we watched for bats — none came so 2130 we retired.

16 km. S., 5 km. W Punta Prieta, 110 m, Baja California, México

8 July 0530 awoke and drove to check traps. In the dry wash (1) we captured:

5 *Dipodomys peninsularis*
1 *Perognathus* sp. (*arenarius*?)

success: =6/50

In the rocky hills area we took:

1 *Neotoma* sp.
1 *D. penninsularis*
1 *Peromyscus* sp.

Success: 3/50

In the sandy flats we took:

1 *Neotoma* sp.
1 *Dipodomys penninsularis*
2 *D. merriami*

success: 4/50

The rocky hill area (2) was vegetated with *Ocotillo*, *Cholla*, *Idria*, *Cardón* and *Bursera* among other plants — the total community suggested a cactus-rock garden

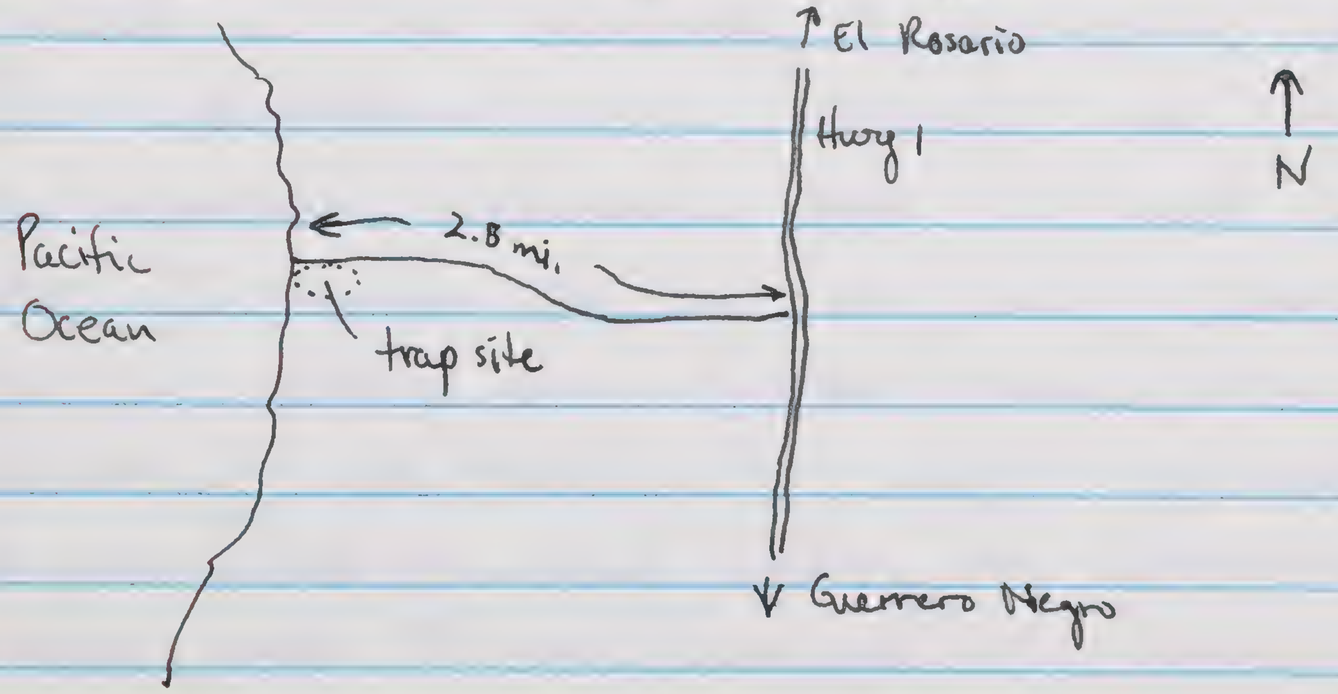
Journal

Hafner, M.S.
1977

En Route: Punta Prieta to El Rosario, Baja California, México.

8 July (con't) 0730 departed this locality and headed S on Hwy 1 for El Rosario. We drove 4.85 mi. S. (on Hwy 1) of El Rosario then took the dirt road marked "Playa Altamira" which headed off to the west. We drove 2.8 mi. to the ocean edge. We noted many gopher signs in a salt-marsh (dry at this time) just to the south of the road. The dominant vegetation was of saline affinity including Salicornia and even Cholla. The soil was sandy near the beach and rather clay-like about 50 m inland (at this point the desert Yucca - Cholla scrub vegetation took-over.

Map of collecting locality:



Journal

Hafner, M.S.
1977

4.5 km S., 14 km W El Rosarito, 1 m., Baja California
México.

8 July (con't) The ocean was a very pleasant change after the heat of the previous days. There was a foggy cloud cover and a moderate breeze from the west. There were abundant remains of fish, abalone, lobster, crab and some cetacean and pennipied remains. We ~~found~~ found a total of 4 *Phoca* skulls, (2 in very good shape) and 2 *Zalophus* (?) skulls, (1 in very good shape). We also noted numerous whale ribs and vertebrae.

We trapped all day long at this locality, and, as usual, pulled quite a few gophers in during the AM and very few there after. John had much better luck than I and pulled-in the majority of specimens. We met and talked with various "locals" including an abalone fisherman and 2 local boys.

1800 - It began to cool-off very quickly, so we pulled traps (after 2 hours of no activity) and headed for Hwy 1. We returned to last night's trapping locality to retrive the knife that I had dropped - (I found it) - and had a quick dinner and retired. Clear, warm night. Our gopher total for

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Hafner, M.S.
1977

En Route: El Rosario to Santa Rosalia, Baja California, México.

the day was 18 (plus the animal that John had captured on the 7th) making a total of 19 animals (Thomomys bottae cactophilus)

En Route: El Rosario to Santa Rosalia, Baja California, México.

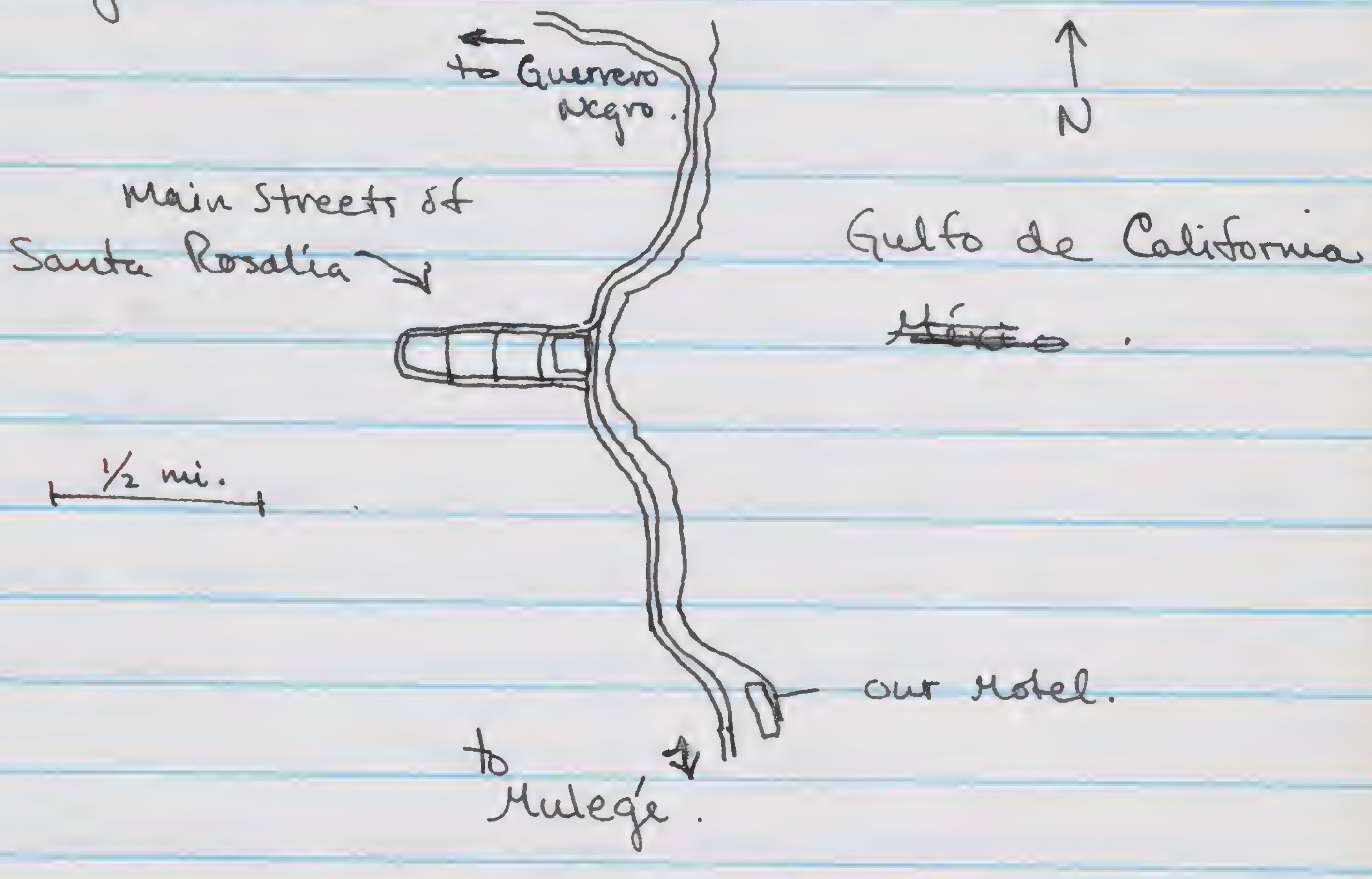
9 July 0530 arose, packed-up and headed S on Hwy 1 for Guerrero Negro. 0900 arrived Guerrero Negro, gassed-up, bought some juices and headed SE on Hwy 1 for Santa Rosalia. We noted a Caracara (Falconiformes) eating a road-kill just SE of Guerrero Negro. The ride from Guerrero Negro to S. Rosalia was very hot, but rapid. We decended the eastern slopes of the main mountain chain and drove about 2 mi. further south into Santa Rosalia. The heat and humidity were both very high. We looked for a motel and finally ended-up in a rather "classy" hotel about 1 mi. S of the main town on Hwy 1. The room cost us 300 pesos for the night (ca. $13.60) which was quite expensive, but our only alternative was a flea-bitten motel in the center of town. The town itself was rather small consisting of 2

Journal

Hafner, M.S.
1977

Santa Rosalía, Baja California, México

9 July (con't) one-way streets:



The buildings were quite picturesque and of the old Méxican style. Our motel was beautiful overlooking the Gulfo and Isla San Marcos. We karyotyped beginning about 1400 and, after skinning the animals, we set out to trap pocket mice. We drove to a locality: 3 km. S Santa Rosalia, 10 m., Baja California Sur, México. The site was in a sandy wash leading from a Mesquite-Cholla canyon to the Gulfo. We set out 2 lines of 50 traps each - 1 in the desert flats and 1 in the rocky canyon sides. We returned to the van and found ourselves quite stuck in deep sand. After about

<u>Journal</u>

Hafner, M.S.
1977

<u>3 km. S. Santa Rosalia, 10 m., Baja California Sur, México.</u>

9 July (con't) an hour of intense sweating in the dirty, sandy wash, we found ourselves even deeper in the sand. (It was, of course, dark making things more complex). We finally let air out of the rear (tubeless) tires and used an old gunny-sack beneath the tires for added traction and escaped. Of course, the tubless tires (one of them) went flat immediately causing us to have to change the tire.

2130 finally arrived in town (after washing at the motel) for dinner. We entered a nice, scenic old restaurant just as it was closing — but we managed to sit awhile and have a cervesa while an old man played old México tunes on a piano; <u>very</u> enjoyable. We reluctantly left this place and had a very nice meal at a nearby restaurant.

2400 - after a shower, we retired - very tired.

<u>3 km. S Santa Rosalia, 10 m., Baja California Sur, México.</u>

10 July 0630 arose and drove to check traps. <u>Very</u> hot, muggy morning; no wind, very humid.

Journal

Hafner, M.S.
1977.

3 km. S Santa Rosalia, 10 m., Baja California Sur, México.

10 July (con't) Results of trapping:

Sandy flats:	2	*D. merriami*
	1	*Perognathus* sp.
	1	*Ammospermophilus leucurus*
Rocky hillside:	1	*A. leucurus*
	1	*Peromyscus* sp.
Success: 7/100	1	*Neotoma* sp.

We were very disappointed with the lack of pocket mice (for today and the entire trip thus far). We kept the *Ammospermophilus* specimens and the pocket mouse for later karyotyping.

0800 we returned to Santa Rosalia, bought supplies, got fuel and air for the tires, then returned to the motel where we finished preparing specimens. There had been a fair amount of maggot damage to our skins ~~fo~~ from S. El Rosario, but the hot sun today cleared that problem.

1300 departed Santa Rosalia and drove S on Hwy 1 through Mulegé, Loreto and Villa Insurgente to Ciudád Constitución. The Bahia de la Concepción south of Mulegé was extremely beautiful, yet deserted. We headed

Journal

Hafner, M.S.
1977

Ciudád Constitución, Baja California Sur, México.

10 July (cont) on the road west of Ciudád Constitución to check the area near Puerto San Carlos for Gopher signs - we saw few. We drove to a point: 10 mi. N (by road) Puerto San Carlos, Baja California Sur, México, where we set out 100 Sherman traps in a sandy desert-scrub habitat. about ½ mi. S of the main road. The plants all appeared to be in very poor health - especially the tall cacti. - perhaps the local irrigation has lowered the water table below some critical level. There is much tomatoe and alfalfa farming in the area of Villa Insurgente and Ciudád Constitución. We were attacked by numerous mosquitoes, so after getting stuck (again) in the sand and finally escaping, we drove back to Ciudád Constitución. We had a fairly nice dinner in a rather shabby joint then drove a few miles west of town and camped on a dirt farm-road - much dust throughout the night - and little relief from the mosquitos. The moon is now about ½ phase.

Ciudád Constitución, Baja California Sur, México.

11 July 0530 awoke and drove to check traps. Warm, windy morning.

Journal

Hafner, M.S.
1977

10 mi. N. (by road) Puerto San Carlos, Baja California Sur, México.

11 July Results of trapping:

success: 3/100   3 *Dipodomys merriami*

We were again quite disappointed. To add to our stress we again became mired in the soft sand and we were extremely low on fuel. We managed to free ourselves and limp into Puerto San Carlos. (arrived 0700). Of course the fuel station did not open until 0800 so we had time to catch-up on our journals.

0815 fueled, we drove back toward Cuidád Constitución. On our way we obtained 10 gals. of potable water (fresh from the well) and bought two Sandias (watermelons) for 10 pesos (45¢) each.

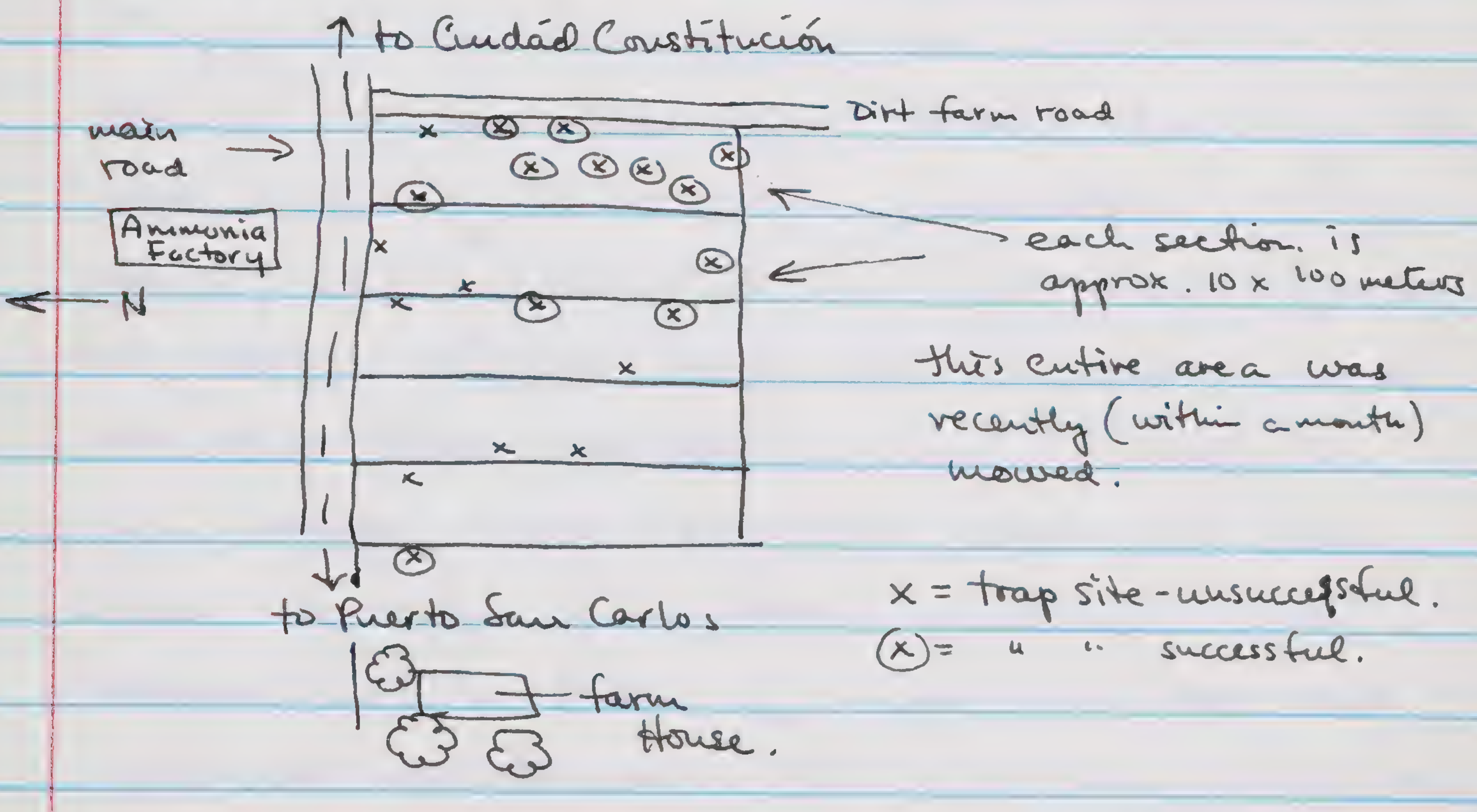
We stopped at an alfalfa field outside of Cuidád Constitución to look for gopher signs. — The signs were numerous, so we set out 12 sets apiece (by 1030). We trapped throughout the very hot day which later became extremely windy and dusty. I had much more luck than John today and pulled-in the majority of gophers. These were large, light brown animals — very beautiful. The adult males were scrotal and many females were

Journal

3 km. W ~~to~~ Ciudad Constitución, 70 m., Baja California Sur, México.

11 July (con't) pregnant. We managed to catch 4 live animals but fear that they are all ♀♀. The animals, for some reason, were most abundant in the section of the alfalfa field that had been recently mowed.

Trapping Sites:



We ended-up at 1800 with 19 gophers. We drove into Ciudad Constitución where we checked into a motel to clean-up - We were exceedingly filthy after the dusty, windy trapping venture. 2000 ate dinner at the hotel restaurant and retired 2130.

En Route: Ciudad Constitución to Las Pocitas, Baja California Sur, México.

Journal

Hafner, M.S.
1977

En Route: Ciudad Constitución to Las Pocitas, Baja California Sur, México.

12 July 0600 arose, and set to karyotyping. I was a bit sick during the night — nothing much, probably resulted from the hot sun and lack of food yesterday. We karyotyped 1 Perognathus sp., 1 Ammospermophilus, and 2 ♂ gophers. We were pleasantly surprised to have 2 live ♂ gophers for karyotyping. We were'nt so pleased to see that the animals from yesterday were beginning to rot. We immediately set to skinning and checked out of the motel by 1400. We stopped at the local bank to change money, but the banks apparently close at 1300! We then bought some cokes and juices and drove about 5 miles S of town on Hwy 1. We stopped in the shade of a ~~pt~~ palm tree and pinned-out our specimens. It is a very windy day. 1630 noted a Caracara swooping low near the highway about 10 mi. S of Santa Rita.
1700 Arrived Las Pocitas and drove to a point 1.2 mi. N (by road) Las Pocitas where we turn NE'ly on an old dirt road. We chose this rocky habitat hoping to ~~cha~~ catch some P. spinatus and/or P. baileyi. The area is sandy overlaid with gravels and occasionally larger rocks. The vegetation is mostly Cholla,

Journal

Hafner, M.S.
1977.

2 km. N Las Pocitas, 110 m., Baja California Sur, México.

12 July (con't) Ocotillo, Rathbunia, Larrea, Bursera, and many candlabra cacti (Pachycerius ?). There are occasional dense stands of Rathbunia, but many open areas.

1900 we set out 200 sherman traps, 50 in each direction of the compass from camp. 2000 Drove into Pénjamo (which is merely a single house on the north side of the Hwy) and had dinner at the only restaurant (the same house). It was getting dark, and since they had no electricity, they lit a kerocene lamp for us to eat by. We had béftec, frijóles y torillas, and of course, cervezas. The old man was quite talkative, but knew no english — we did fine anyway with my spanish and he told us of his days (1951-3) in Lodi, California as a farm laboror. He complained of the lack of freedom ~~and~~ of movement in California for Méxicanos. 2130 returned to camp and retired. Warm, breezy night., clear.

2 km. N Las Pocitas, 110 m., Baja California Sur, México

13 July 0530 awoke and checked traps:

9 Perognathus baileyi
12 Dipodomys merriami
2 D. peninsulae
1 Neotoma sp.

Journal

Hafner, M.S.
1977

2 km. N. Las Pocitas, 110 m., Baja California Sur, México.

13 July (cont) success: 24/100.

We released all but the pocket mice and Dipodomys peninsulae and prepared specimens, saving 2 of each taxon for karyotyping.

1100 departed this locality and drove via Hwy 1 south to La Paz. We passed through the narrowest point of Baja (about 25 ~~miles~~ miles wide) and could see both the Pacific Ocean and the Gulf from the Hwy.

1230 arrived La Paz. Drove to a large bank near the Governor's Palace and changed money. We then obtained directions to the tourist office. After a few hours of shuffling from one office to another we obtained our car permit for entrance onto the México mainland. We drove out to the Ferry docks about 17 km N. of town to find out that tickets were no longer being sold accept for the day of departure. We drove back into town — an extremely hot day, where we looked up a tourist agency and got our reservations for the ferry trip to Mazatlán on this Sunday, 17 July. The cost was approximately $40. U.S. The woman at the agency could speak very good english — she invited us to use her office phone to call home (collect) after 5:30

Journal

Hafner, M.S.

La Paz, Baja California Sur, México.

13 July this Evening. I haven't been feeling well all day — and the running arround and the heat and humidity are really bothering me!!. Regardless, we decided to finish our chores then return to the travel agency to call home.

1600 we washed our clothes at a local laundromat. (of course, the machines use american money: 35¢). The heat was sweltering inside the laundromat!

1700 had a light dinner at a local restaurant. We then drove out of town (W) in search of a trailer court Ted Pappenfus had recommended — we couldn't find it. 1745 Returned the the travel agency — called home. All is well, and I am very pleased.

1900 Drove south from La Paz to a point miles south of San Pedro ~~in~~ and camped near a wash. We noted a large bat (*Lasiurus*?) feeding overhead as we retired early.

5 km. W El Triunfo, 380 m., Baja California Sur, México.

14 July 0530 awoke. We noted many gopher diggings in the area so we began to set out our MacAbees. The holes were plugged quite well and the ground was either hard rocks our very soft sand, making digging quite a problem. 0700 pulled our few sets and drove

John caught an animal here (gopher).

Journal

Hafner, M.S.
1977

En Route: La Paz to Cabo San Lucas, Baja California Sur, México

14 July (con't) on S on Hwy 1 (labled "Hwy 3" on the roadsigns). We stopped at an old mineshaft to the S of the Hwy several miles east of San Bartolo. We found no bats in the mineshaft.

0830 arrived at the small village of Las Cuevas. We asked permission to trap "topos" in a cornfield (and nearby empty fields). We set of several sets each by 1000 at which time the heat was becoming extremely intense. Sweat was pouring off us and we could scarcely see for the dust and stinging sweat. We trapped and processed gophers ~~at~~ until about 1400 at which time we pulled traps and headed S. Even though we didn't catch a live gopher for karyotyping, we must trap tonight for Perognathus dalquesti S of Todos Santos. We pulled a total of 12 animals from the empty fields adjacent to the cornfields and we'll ~~tig~~ try to return Sunday morning to catch a few more and especially a live animal.

Locality: 6 km. N, 10 km E Santiago, 60 m, Baja California Sur, México.

12 Thomomys bottae

A local dog (which we had befriended) ate the carcass of my number MSH 870 immediately after I had tissue and blood pulled (Que lastima).

Journal

Hafner, M.S.
1977

En Route: Las Cuevas to Cabo San Lucas, Baja California Sur, México.

14 July (con't) 1400 we continued south on Baja 1. We were now entering "short tree forest" habitat. Tulip trees, Hecho, *Rathbunia*, *Cholla* spp., Cardón, *Acacia*, etc.

We got supplies in the town of San José del Cabo then drove along the coast to San Lucas. The Ocean and beaches were quite beautiful.

1600 we headed n'ly on the dirt road toward Todos Santos. At at point 7.4 mi. S (by road) from the village of Migriño I collected a Horned-lizard (MSH 887). We noted numerous vultures and sparrow hawks along the ± 20 mi. stretch from San Lucas to Migriño.

1730 drove through Migriño (2-3 houses away from the road) to a point a few miles north of the village and walked along the beach to cool-off - The swells were very strong and the beach quite steep - we didn't swim.

We skinned the gophers we had captured this morning then drove to a point 4 mi. (by road) SE of Mègriño to set of Sherman traps. This was given as the Type locality of *Perognathus dalquesti* so we decided to put all traps in this general area.

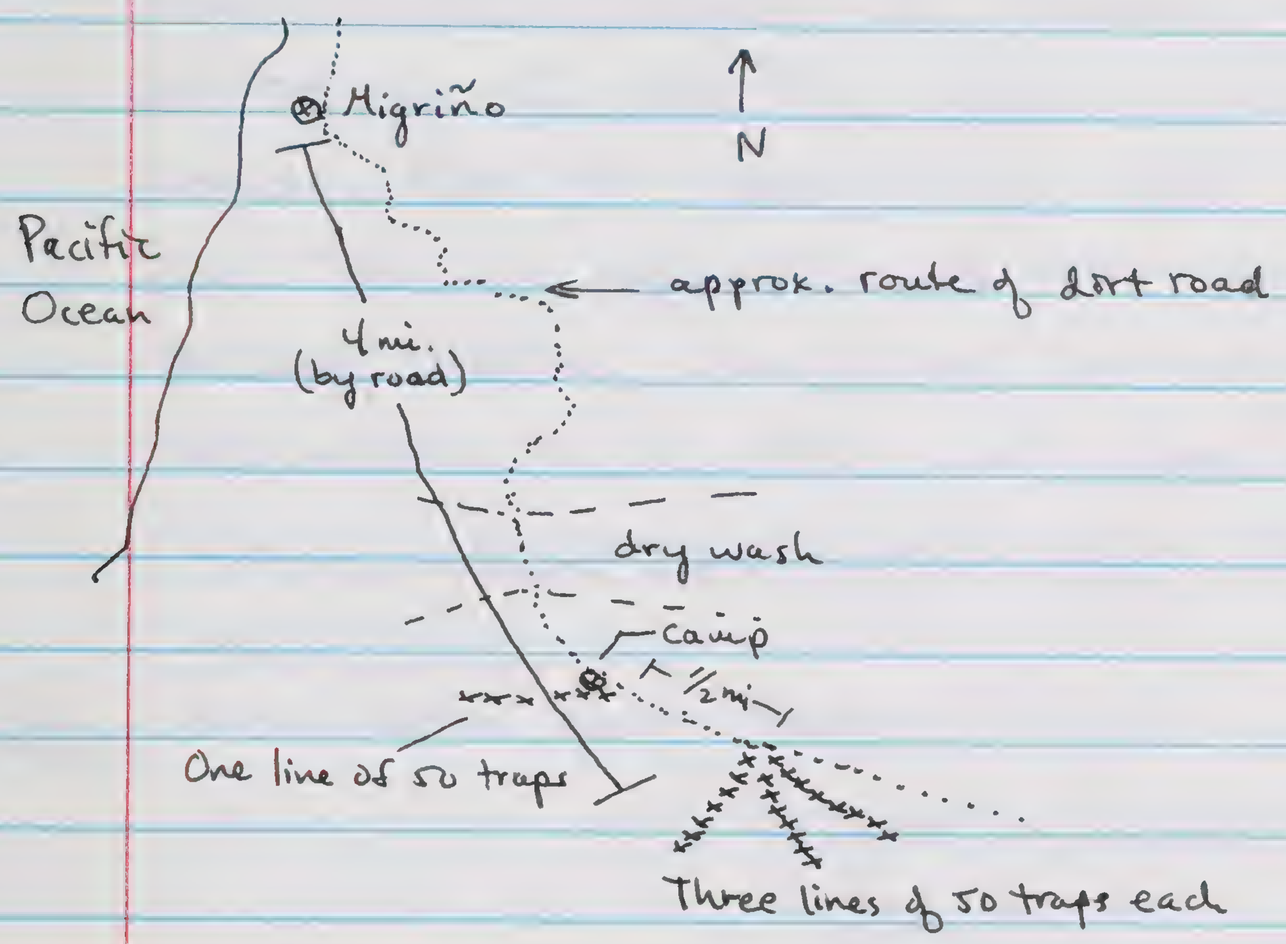
Journal

Hafner, M.S.
1977

4 mi. SE (by road) Migriño, 90 m. Baja California Sur, México.

14 July (cont.)

Map of Trapping locality:



All traps were placed in the short tree forest habitat – Rathbunia, hecho, Tulip trees, Acacia, Mesquite, Cholla, etc. Very thick, dense veg. habitat. Rocky soil.

2000 Finished preparing specimens in the cool of the evening. 2030 a young american couple (probably on their honeymoon) pulled nearby camp in their car rented from La Paz. The guy couldn't even open the car hood to search for the problem that was causing a terrible racket. We looked beneath the car for them and

Journal

Hafner, M.S.
1977

4 mi. SE (by road) Migriño, 90 m., Baja California Sur, México.

14 July (con't) assured them that they merely had a hole in their exhaust pipe. A couple local mexican ranchers also stopped and offered their assistance. I told the Mexicans that the couple would like to follow them into San lucas so the Mexicans agreed and the two cars noisely headed south in the night.
2300 retired in a still, cool, damp night.

4 mi. SE (by road) Migriño, 90. m., Baja California Sur, México.

15 July 0530 awoke and checked traps:

15 Perognathus spinatus
1 Peromyscus sp.
1 Neotoma sp.

Success: 17/200

Of course, all we trapped in the rocky, scrubby habitat were spinatus. Apparent the type locality given us was rather inaccurate. We decided to attempt one more night to catch P. dalquesti, this time in the sandy washes. If dalquesti is related closely to P. arenarius (which it looks like), then we ~~so~~ might find them in similar habitats.(?) We put-off processing the animals and drove to a beach 4 mi. N of Migriño were we

Journal

Hafner, M.S.
1977

4 mi. SE (by road) Migriño, 40 m., Baja California Sur, México.

15 July walked the beach in search of carcasses. I found 2 ~~Pelican~~ Pelican carcasses from which I kept the skulls. I later found the carcass of what appeared to be a (least Tern?) maybe not. Only one wing was still intact it was grey on top with a black tip and white beneath.

I neglected to ~~meti~~ mention that I found the skeleton of a Turkey Vulture near camp last night. It apparently had been shot from atop a large Hecho nearby. I kept the skull.

At the beach John & I noted a small portion of the ~~ca~~ cranium of what seemed to be a large, ♂ seal lion. — the saggital and nuchal crests were well developed. We did not keep the skull. We also picked-up (but later discarded) 2 pup-fish remains.

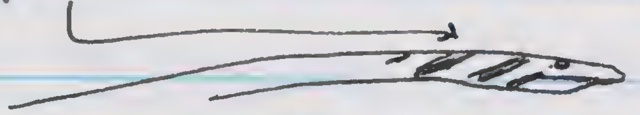
1100 very warm (hot!!!); We could see a squall brewing to the south so we picked-up our gear and drove back to our camp 4 mi. S. of Migriño. about 2 mi. N Migriño we saw a large, fast snake cross the road. It appeared to be beginning to shed but the head and neck were obviously marked with

Journal

Hafner, M.S.
1977

4 mi. SE (by road) Migriño, 90 m., Baja California Sur, México.

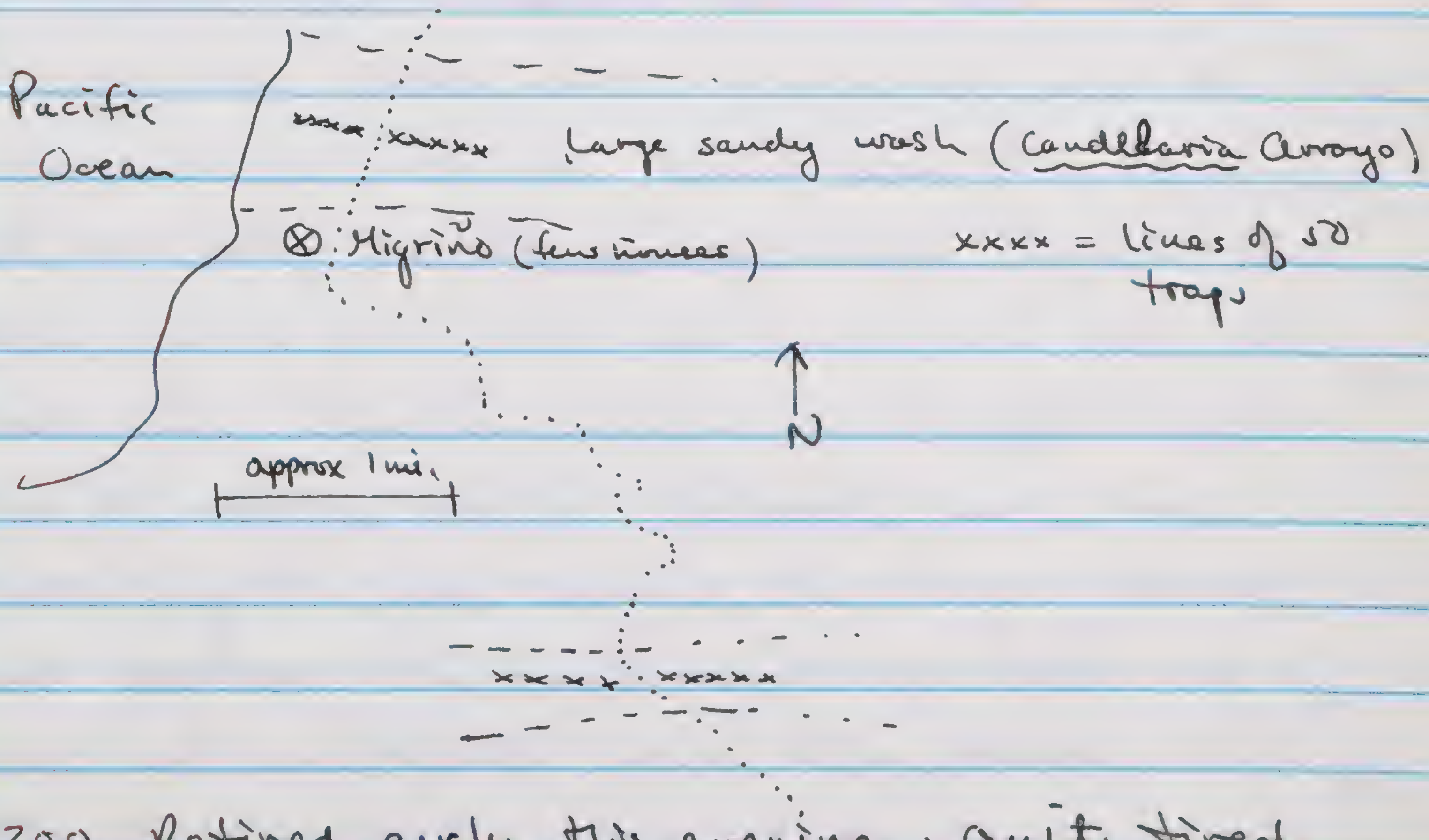
15 July (con't) black stripes. The snake moved extremely



fast and was about 4 to 5 feet in length. I noted several leopard lizards today in the sandy wash areas.

We spent most of the day preparing specimens in the scorching sun. Had a watermelon for lunch.

1830 Drove to set traps. Set out 100 traps in 2 lines (50 each) in the sandy wash just north of camp (about 3.5 mi. SE (by road) Migriño). We set out the other 100 traps in the sandy wash very close to Migriño.



2200 Retired early this evening, quite tired after a very hot day.

Journal

Hafner, M.S.
1977

Migriño, 10 m., Baja California Sur, México.

16 July 0530 awoke and drove to check traps. Heavy Cloudcover... showers visible to the SE.

3.0 mi. SE (by road) Migriño, 80 m., Baja California Sur, México.

Results: 7 P. spinatus

Success: 7/100

Migriño, 10 m., Baja California Sur, México.

1 P. maniculatus

success: 6/100 1 Neotoma sp.

4 Perognathus sp.

These Perognathus may very well be P. dalquesti — or perhaps, (if we are less fortunate), P. arenarius.

There was a fairly heavy shower as we checked the latter set... even at 6:00 AM, the rain was a welcome relief from the heat. We kept only the Perognathus from Migriño and drove back to Cabo San Lucas via the dirt road. In Cabo San Lucas we bought supplies, got a wooden box for specimens and some screening to place around the drying skulls and skeletons. The cloud cover had broken-up by now and we headed back NE'ly toward Santiago. We checked out the town of Santiago (especially looking for water) but found nothing of interest.

Journal

Hafner, M.S.
1977

En Route: Cabo San Lucas to La Paz, Baja California Sur, México.

16 July (con't) We stopped at the gopher locality of 2 days ago and began to set out live gopher traps. (1000 HRS.)

6 km. N, 10 km E, Santiago, 60 m., Baja California Sur, México.

Results: 2 Thomomys bottae (live)

We now had the animals we needed for karyotyping.

1100 Extremely hot already - a very light cloud cover protects us from absolutely broiling.

1245 arrived La Paz. Picked-up fuel, groceries and headed toward a motel. Found a very nice one on the western edge of town "Las Calebases" (or something like that?). We checked-in, karyotyped and showered. Later, we went into town and had a so-so meal at a fancy restaurant on the main water-front drag.

2200 retired early. Heavy cloud cover.

La Paz, Baja California Sur, México.

17 July 0600 arose and put-up specimens. 0930 checked-out of the motel and drove to meet our travel agent who would take us to the ferry.

1030 arrived Pichilingue (N of La Paz) where the ferry-docks are located. The "officials"

Journal

Hafner, M.S.
1977

En Route: La Paz, BCS, to Mazatlán, Sinaloa, México.

17 July (con't) measured our vehicle and we passed under the 5 m. length limit. (would have cost 100 pesos more had we been over 5 m.) As it was, the ferry cost 600 Pesos for the vehicle. and 100 pesos for each of us. (800 Pesos ≐ $35 us.) We were told to return at 1400 to begin lining-up for the 1700 departure.

1200 we drove into town, bought more supplies for the voyage, had a nice lunch, then returned to the ferry.

Of course, we waited for hours for anything to happen at the ferry docks. Although all the Mexicans were "oficial" in some way or another, nobody knew what was happening.

1600 we finally loaded the vehicle on the ferry. The ship was about 400 ft. long and probably 20-25,000 Tons (DWT). Twin screw with a bulbous bow. Very nice... built in Germany, 1975. The vehicles were in a large hold below all of the passenger accomodations — we were told by one official that we could go below to our vehicle any time we desired during the voyage. As it turned-out, a man selling cigarrettes and chewing gum gave us the correct story — we couldn't go below during the voyage. — — so we rushed below

Journal

Hafner, M.S.
1977

En Route: La Paz, BCS, to Sinaloa, México (Mazatlán)

17 July (con't) to grab our sleeping bags and H_2O bottle. (our 100 peso fare does not include a cabin (400 pesos). We had a rather pleasant, relaxing evening after the vessel finally got underway 1715. We had a drink or 2 at the bar then retired on the after-starboard bridge deck. Restless sleep with people everywhere. Windy, moist night.

En Route: La Paz, BCS to Mazatlán, Sinaloa, México.

18 July 0500 awoke — very moist — at least our deck wasn't as wet ~~at~~ as most others. We looked over the rail for a couple hours, talked to other americans, (there were very few), then at 0700 ate breakfast in the very nice shipboard restaurant. 0900 the ferry docked in Mazatlán. (a fairly smooth voyage in all). It took approximately 1½ hours to get all the passengers off of the vessel — owing mainly to gross disorganization. Finally at 1030 we were able to drive off of the vessel. We headed south immediately to the town of Villa Union where we drove northerly through the town of Siqueros to a point some distance (to be determined later) north of the town. We noted gopher mounds and began to set out live traps. We were

Journal

Hafner, M.S
1977

1 km. N Siqueros, 50 m., Sinaloa, México.

18 July (con't) particularly interested in the race of Thomomys that occurs here (T. ~~$~~ umbrinus atrovarius) because Patton feels that this animal is very different from other umbrinus – at least morphologically.

I set out 5 sets and John 3. John turned-up a nice, large Tarantella sp.? from one of his holes. We worked the few sets all afternoon. There were numerous lizards around; Iguanas (about 1 m. long!), ~~Cned~~ Cnemidophorous, Sceloperous, etc.

1600 no catches yet. We washed-up in the muddy Rio Presidio, a fairly large river about 50 m across at this point. We talked with several local people and learned of bats in an old man-made cave just on the other side of the river – we may cross the Rio before we leave. All afternoon there were threatening clouds to the NE of us, but nothing directly overhead to block the sun. We were literally drenched in sweat in minutes and ~~a~~ only a light breeze to cool us.

1800 – Still no gopher catches. We set out 120 Sherman traps as per the following map.

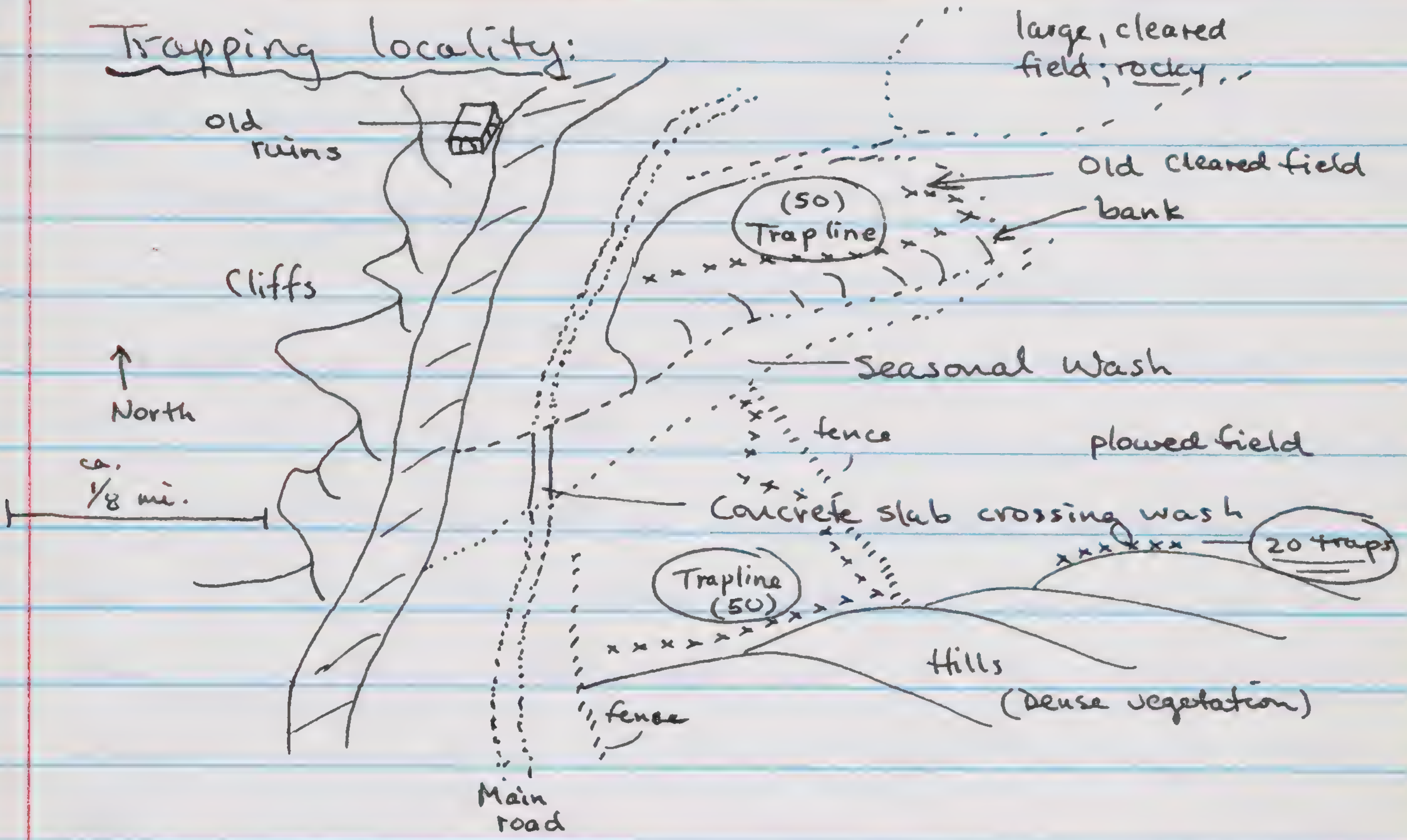
Journal

Hafner, M.S.
1977

1 km. N Siqueros, 50 km., Sinaloa, México.

18 July (con't)

Trapping locality:



The vegetation is basically thorn forest — moist, for the most part, with patches of annual grasses. Many Acacia, etc. The soil is sandy with many rocks (river rocks) in most parts.

2000 - Prepared for sleep. Many, many insects around — numerous interesting beetles, large Cicadas, many moths.

2100 There was now much thunder and lightning to the NE and we ~~felt~~ occasional sprinkles, so we covered our cots with the large ground cover. The rain was short lasting, and we had a fairly restful sleep. We heard numerous frogs. The cloud cover persisted throughout the night.

<u>Journal</u>

Hafner, M.S.
1977

<u>1 km. N Siqueros, 50 m., Sinaloa, México</u>.

<u>19 July</u> 0515 awoke and checked traps. Nothing in gopher traps (some activity, though).

<u>Trapping Results</u>:

	15	<u>Perognathus</u> (pernix)
success: 18/120	3	<u>Perognathus</u> (large animals)
	18	

We released ~~one~~ two of the juvenile pocket mice. The 3 larger mice were captured in the line of traps (20) that JCH set out in the "chapparal" hillside adjacent to a plowed field (see map). The other 100 traps were in grassy areas punctuated with occasional trees.

All morning we continued attempting to get a <u>T. u. atrovarius</u>. The sun was extremely intense and by about noon we were ready for a swim in the muddy Rio PResidio. We first crossed the river (waist deep) and ~~explo~~ explored the ruins on the far side. The house had served as a pump station for water supplied to Mazatlán over 20 years ago. There was no roof on the building and the earthen floor was about 30 feet below ground level. We found an old cave and noted bats flying within (only 6-10 bats). We then re-crossed the river, checked our gopher sets and at 1300, we

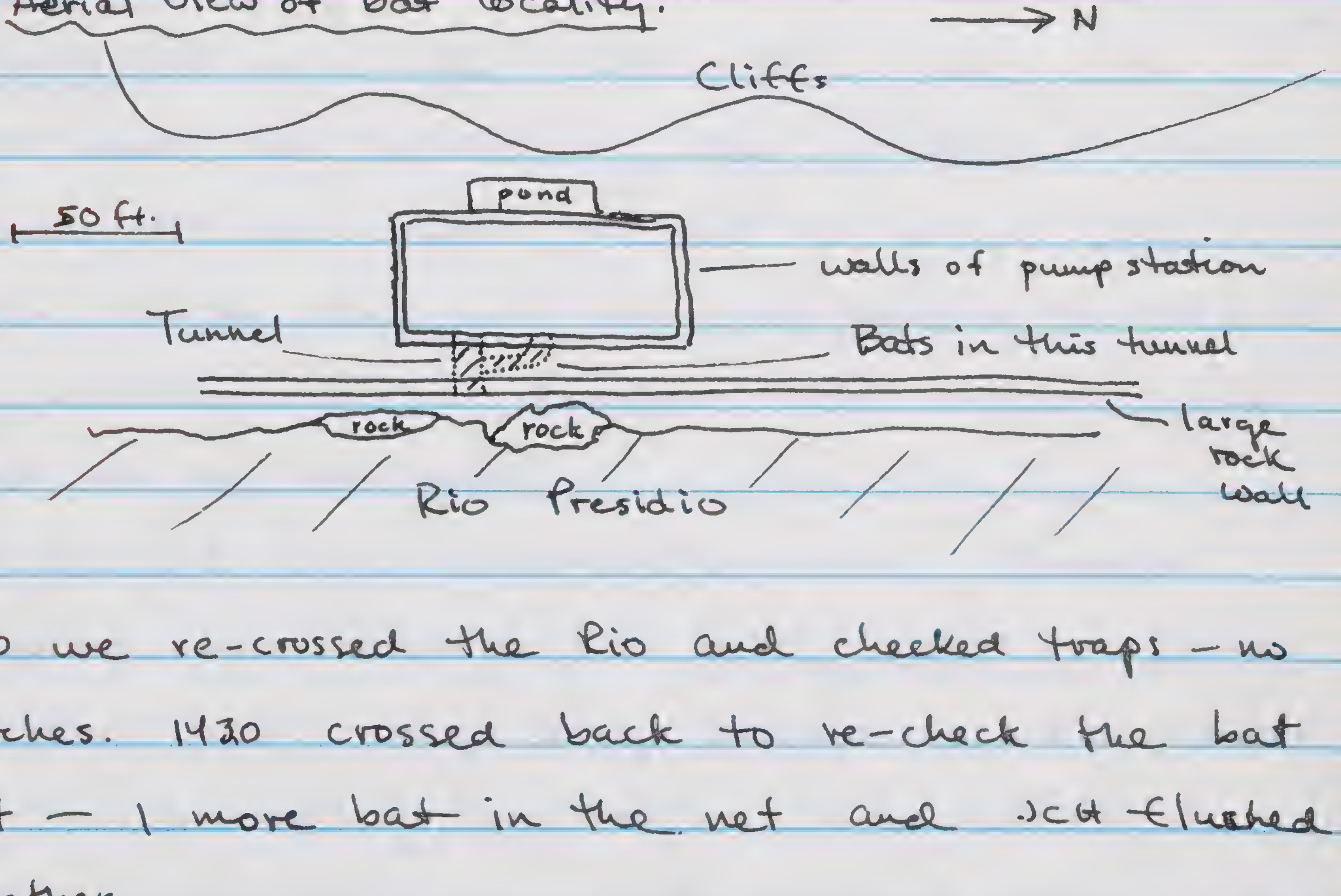
Journal

Hafner, M.S.
1977

1 km. N Siqueros, 50 m., Sinaloa, México.

19 July (con't) returned to the ruins with a bat net and poles. There was an old "pond" behind the house which still had a water supply from some unknown source. We noted turtles (6-8" dia. carapace) and a large bullfrog within. We set up one mist net at the western entrance to a 30 ft. cave. JCH then entered the southern entrance and flushed the bats. We managed to catch only 1 bat (Artibeus).

Aerial View of bat locality.



1400 we re-crossed the Rio and checked traps – no catches. 1430 crossed back to re-check the bat net – 1 more bat in the net and JCH flushed another.

Total: 3 Artibeus (hirsutus).

1530 We decided to pull traps and search for a more productive locality – perhaps at a ~~higher~~ higher elevation. Just as we were pulling

Journal

Hafner, M.S.
1977

1 km. N Sigueros, 50 m., Sinaloa, México.

19 July (con't) traps, JCH captured 1 gopher (in a macAbee) that was still alive. I ran to the scene with a live gopher trap and we managed to bring the animal back to camp alive.

1 Thomomys umbrinus atrovarius

We also noted several Sigmodon individuals running around the grassy fields during the day and JCH noted a few flocks of greenish parrots flying overhead. There were many white Egrets (of some type) along the river also.

We were very pleased to have at least this one specimen to karyotype. We had run out of water earlier in the day and we now decided to celebrate by breaking out our distilled water supply... what relief in the hot sun!!!

1600 headed back toward Mazatlán. Bought supplies and checked in Hotel California just off the main drag along the beach. Except for the beach area, Mazatlán is a veritable slum.

1700-2000 we karyotyped the animals. The gopher is unlike any we've ever seen — ~~was~~ very sparcely haired with very procumbent incisors — quite unlike most Thomomys.

We are convinced that we have 2 species of pocket mice also. The larger form is also darker,

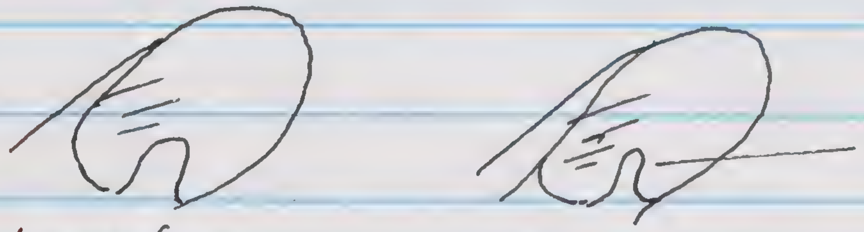
Journal

Hafner, M.S.
1977

1 km. N Siqueros, 50 m., Sinaloa, México.

19 July (con't) has a shorter (relative and absolute), more quickly tapering ~~tail~~ tail and has a distinctly different shaped tragus.

left ear:



We anxiously await the karyotypes of bothe the gophers and the pocket mice.
2000 drove to the beach drive for dinner – had a very nice abalone dinner in an outdoor café.
2200 retired. JCH put-up the gopher this PM. Lightening visible to the east. Sliver-of-a-moon.

Mazatlán, Sinaloa, México.

20 July 0600 awoke and prepared animals. Packed-up dried specimens. We stained and mounted several slides, but the microscope would not function properly. We'll probably have to wait until we're back at MVZ.
1400 packed-up and departed Mazatlán. Extremely hot, humid and dusty. We drove S to Villa Union then back N to Siqueros locality to once again attempt to catch the illusive

Journal

Haefner, M.S.
1977

1 km. N Siqueros, 50 m., Sinaloa, México.

20 July (con't) pocket gopher. By 1600 no gophers so we departed this locality and drove back to Villa Union. We turned south and drove about 1 km. to the turnoff to Durango. After fueling, we headed east across the Sierra Madre Occidental. 1730 it began to rain. We stopped for dinner at a great (and scenic) "German" Restaurant (Villa Blanca Hotel) at an elevation of 1200 m. We were now in the Pine belt and the cool, moist air was very refreshing. This hotel was owned and managed by an old German man who spoke excellent english. He had lived for a time in Santa Ana, California then bought this Hotel after living in Mazatlán for a short period.

We drove about 30-40 miles further ~~to~~ and camped just as the sun set. A light sprinkle fell continuously. We set out 40 live traps in a steep, rocky ~~to~~ hillside and along a steep, moist wash — we noted much leaf litter and moist vegetation on the ground, however no large brush of any kind. Pine forest with numerous epiphytes on the trees.

We put up the awning to ward-off the rain and wrote-up our field notes.

2200 retired.

Journal

Hafner, M.S.
1977

Vicinity W El Palmito, 1900 m., Sinaloa, México.

21 July 0530 awoke. It had rained on and off throughout the night – usually a light rain. We checked traps:

1 *Peromyscus* sp.

success: 1/40

0630 broke camp and drove on eastwardly. The Sierra Madre Occidental are extremely beautiful mountains! Very picturesque – numbers of rich vally and majestic canyons. We ended the steep climb from near sealevel to about 3000 m elevation and began the treck across the Mexican Plateau to Durango. From La Ciudad to Durango is level to almost downhill. We were inspected again as we crossed the ~~boa~~ border into the state of Durango. (actually the inspection station was just west of El Salto.). 1100 we changed money and bought supplies in Durango. This city is rather nice – cleaner than most we've seen.
1230 Drove south of town, stopped, ate lunch and dried the skins. Very pleasant, warm weather. 1430 continued south on Hwy 45 and turned-off at Sombrerete. We drove 7.3 mi. S (by road) from Sombrerete. We drove to a

Journal

Hafner, M.S.
1977

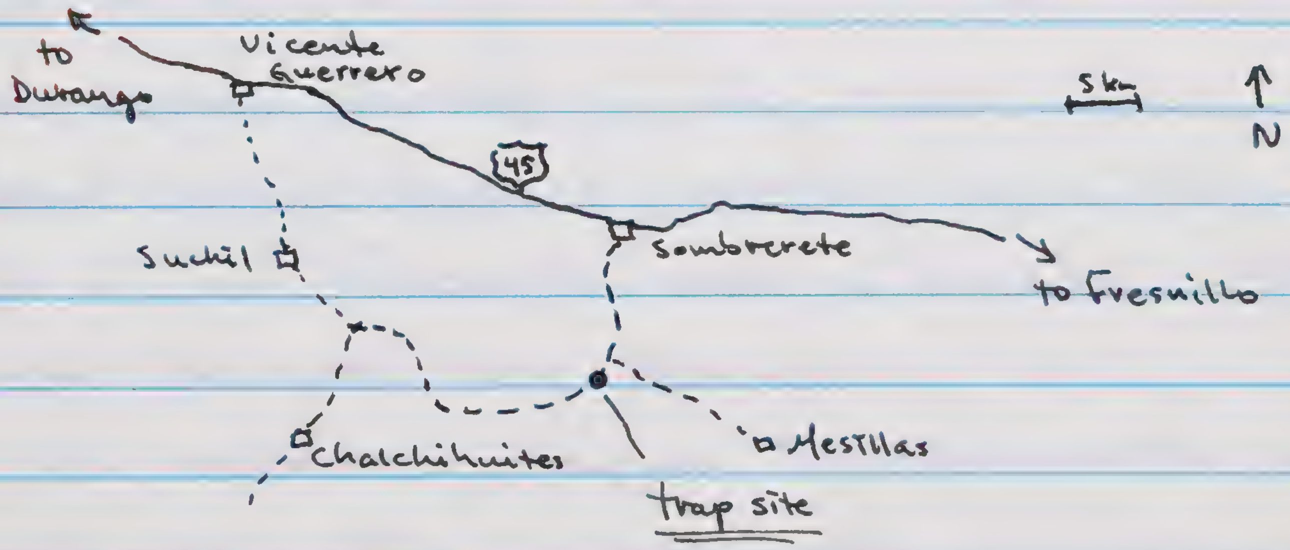
10 km. S, 2 km W Sombrerete, 2130 m. Zacatecas, México.

21 July (con't) distance of 1.9 mi. beyond (SW) of the turn-off to Mesillas, where we camped and set out gopher traps in the Mesquite-grassland. By nightfall we captured 5 Thomomys umbrinus and, due to the coolness of the evening, we decided to leave the traps out over-night.

1900 we set out 100 sherman traps, 50 N of the main road and 50 south (all Mesquite-grassland.)

The valley (Valle San Antonio) is very beautiful; Much agriculture (cotton?), streams, etc. The ~~railf~~ railroad passes through the valley to the S of where we camped. We noted many ground squirrels (unidentified), and numerous kangaroo rat holes.

Map of locality:



Journal

Hafner, M.S.
1977

10 km. S, 2 km W Sombrerete, 2130 m, Zacatecas, México.

21 July cont — We skinned our specimens then retired about 2100. I heard the call of an Onychomys several times. 0200 it began to rain heavily, so we quickly awoke and ~~st~~ set-up the awning. We had a very poor, wet, cold nights sleep.

10 km. S, 2 km W Sombrerete, 2130 m, Zacatecas, México.

22 July — 0600 awoke to a very cool morning. We haven't as yet adjusted to the 1 hour time change as we entered Durango, (so we awoke later than usual). Checked the Sherman traps:

25 *D. merriami* (+ 1 tail only)

Success: 25/100

We released all specimens and set to checking our MacAbee traps. John had captured 7 specimens over night, I only 1. My specimen had been ~~band~~ badly damaged, possibly by a Tarantula, so I was forced to make a skeleton. (None of Johns specimens were damaged).

We continually trapped throughout the warm, windy day. We talked with one old man who happened to walk by — he managed some 40 cattle that were grazing in the area. The gophers were almost inactive throughout the

Journal

Hafner, M.S.
1977

10 km. S, 2 km W Sombrerete, 2130 m., Zacatecas, México.

22 July (con't) daylight hours. Perhaps an early afternoon rain explained our success yesterday afternoon. By 1400 we had a mere 16 gophers, none alive. I finally brought in a live male, so we injected him and later karyotyped.

Total Catch: 17 Thomomys umbrinus

1700 we broke camp and drove to Sombrerete. JCH attempted to call home (Jimmy's birthday) from a "Farmacia" but the place was so busy and the people so rude (not purposely, we think), that we finally left and headed for Fresnillo.

We gassed-up in Fresnillo (the main highway bypasses the ~~town~~ town). 1900 arrived in Zacatecas, an old colonial city (dirty and dusty). A huge, ornate cathedral sits in the center of the city. We called our wives from the large hotel to the north of Zacatecas. Everything is fine with Darcey, Emily and Julia! We then ate at a rather expensive place (with rather poor food) and drove about 10 mi. S of town to camp along the highway. Cool, clear evening. We were very tired and looked forward to a restful night.

Journal

Hafner, M.S.
1977

3 km. N Ojocaliente, 2030 m., Zacatecas, México.

23 July 0615 awoke, our bags wet with dew. We broke-camp and headed south on Hwy 45 to the above locality just north of Ojocaliente (Ojo Caliente on some maps). We turned-off on the much-used dirt road which headed towards Los Pinos and another small pueblo to the east. We set out traps (MacAbees) ~~from~~ along this dirt road from the intersection with Hwy 45 to a point 1.5 miles east of the intersection. A map of the trapping site follows.

By 1030 we had a total of 36 sets out and we pulled-in 15 gophers on our first pass. (We stopped after our 1st pass and put-up skins from yesterday). We took blood and tissue from these 15 specimens, then re-checked traps... 10 more gophers.

Total Catch:

25 *Thomomys umbrinus*

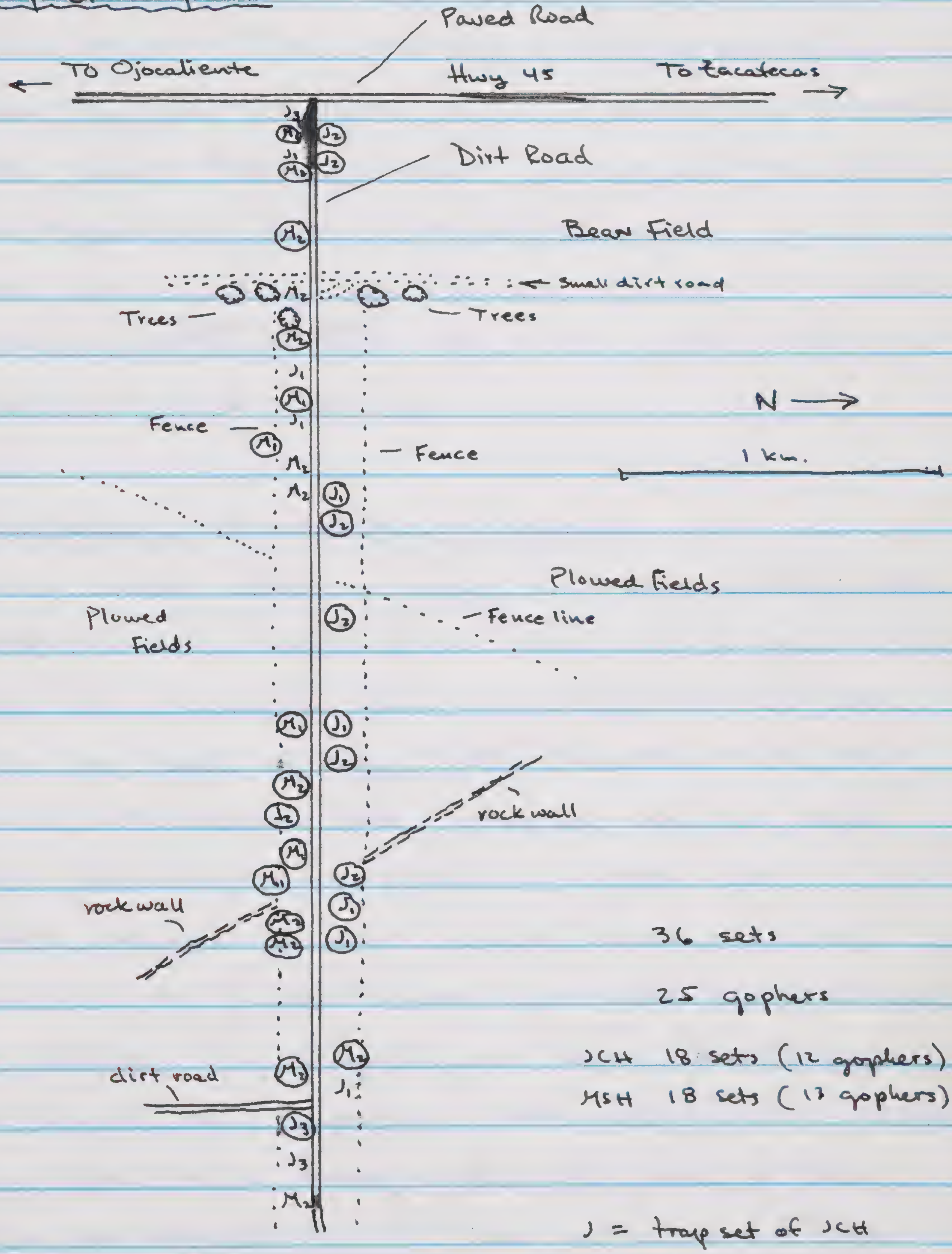
~~#~~ 1500 - we took blood and tissue from the remainder of the specimens then drove into Zacatecas City. The habitat at the above locality was mainly agricultural — the native vegetation was generally Mesquite and *Opuntia* grassland. The soil was rocky and reddish in color. Gophers were few accept in

Journal

Hafner, M.S.
1977

3 km. N Ojocaliente, 2030 m., Zacatecas, México.

23 July — Map of trap line.



36 sets

25 gophers

JCH 18 sets (12 gophers)
MSH 18 sets (13 gophers)

J = trap set of JCH
M = " " " MSH

(subscripts signify number of traps per set)

Journal

Hafner, M.S.
1977

3 km. N Ojocaliente, 2030m, Zacatecas, México.

23 July (con't) certain arears of high density — such as where we collected. Three of the 25 specimens were alive so we checked into a motel in Zacatecas (140 pesos = $7.00 us) and karyotyped (one of the specimens died in transit).
2000 ate a very nice dinner (best yet) in the restaurant (associated) ~~connected~~ with the motel. 2130 we showered and retired.

Zacatecas, Zacatecas, México.

24 July ~~0620~~ 0620 arose after a very nice night's sleep. We wrote-out skin labels (we had yet to prepare the 25 specimens from yesterday's catch). At 0800 we had a very nice breakfast in the same restaurant. We returned to our room and prepared the specimens 0900-1200.
1300 packed-up and drove north to the turnoff to Guadalajara (just north of Zacatecas). We turned S on Hwy 54 and drove to Villanueva. We bought some supplies in Villanueva (and 2 sombreros) and drove to a shady spot just south of town where we stopped to dry skins in the sun. The sombreros were worn by the local people and not mere souveniers. Each cost 140 pesos (= $6.50 us) and one was of Palm and the other of Trigo (= wheat). They were especially well made. We've

Journal

Hafner, M. S.
1977

En Route: Zacatecas to Moyahua, Zacatecas, México

24 July (con't) noticed that we began to see sombreros (of the wide brim type) worn commonly by the local people only since we approached Zacatecas City. North of Zacatecas city, everyone wore standard "~~cow~~ "cowboy" hats.

We departed our rest stop at 1600 Hrs and drove south on Hwy 54. The countryside was extremely beautiful with large Mesquite trees, Opuntia cactus and grass. Mountain ranges were to both the east and west of us making a very [Blew a tire just north of Tabasco] scenic journey. We stopped in Tabasco (a small puebla) where we looked through a few shops. We each bought a rustic water vase of "Terra Cota" with a cup thrown in for 25 pesos (=$1.15 US) each.

1800 The sky was clouding over and a large storm was approaching from the east, so we decided to rest for while and ate dinner in Jalpa. The rain began to fall heavily as we drove into town. We had a very nice bisteck meal for 18 pesos (80¢ US) each.

1900 drove several miles south of Jalpa on Hwy 54 and pulled over to sleep. Heavy rains falling so we slept in the van. Warm, humid weather. Continuous, light to moderate rainfall.

Journal

Hafner, M.S.
1977

En Route: Jalpa, Zac. to San Luis Potosí, S.L.P., México.

25 July 0600 awoke - very humid. It had rained most of the night and the ground was extremely muddy. We broke camp and drove S on Hwy 54 through the densely vegetated countryside until we arrived at the town of Moyahua. We then turned around and drove to a known locality of Thomomys a few miles north of Moyahua (Goldman & Nelson). We searched the area for several miles in each direction from the known locality and could find no traces of gopher diggings. The ground was a sopping mire of mud - which would seem completely inhospitable for Thomomys. After searching a while longer we decided to head for the next known locality for Thomomys near the City of San Luis Potosí. It is our impression that Thomomys may no longer live in this valley north and south of Jalpa.

0900 We drove east on Hwy 70 from Jalpa, through Aguascalientes (where we bought supplies) and on to the town of Arriaga (Villa de Arriaga) This town, or 1 km. S of this town, is the type locality of another Thomomys race (Dalquest). We searched high and low in the countryside just S of town and could find no evidence of gophers.

Journal

Hafner, M.S.
1977

En Route: Arriaga to Ventura, San Luis Potosí, México.

25 July (con't) The land was mostly in agriculture now — the type population may very well have been ephemeral.

1100 we continued east on Hwy 70. We noted gopher evidence on the road cut several miles east of Arriaga. There was evidence of only 4-5 individuals so we continued eastward.

1300 We spent a few hours searching for the type locality of T. u. potosinus. JLP had given us an incorrect locality NW of San Luis Potosí and only when we re-read Dalquest's description of the habitat did we realize the mistake. We drove NE of San Luis Potosí on Hwy 57, past the turnoff to Tinaja to the small station town of Ventura (Estación Ventura). This town (few houses) is a train stop where some type of mineral cargo (mined locally) is loaded.

1630 we began trapping gophers along the SE side of the Hwy 57 road cut at a point about 30 m. NE of the railroad crossing. The gophers were quite thick allowing each of us to put out 12 sets in a short while. By sunset we had pulled-in 12 gophers.

Journal

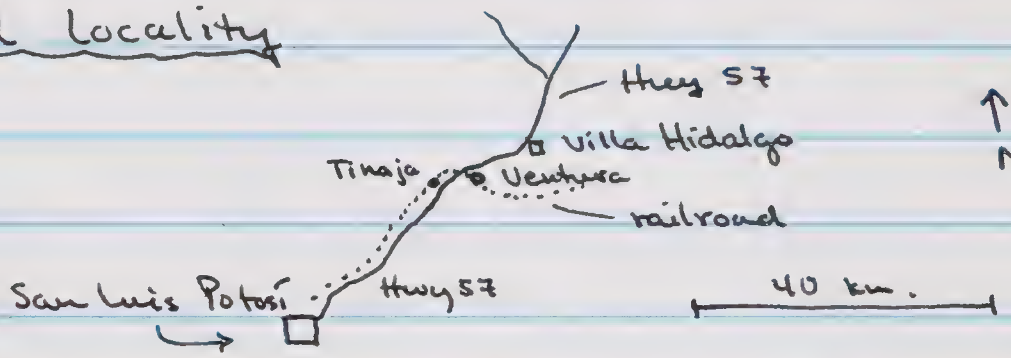
Hafner, M.S.
1977

Ventura, 1680 m., San Luis Potosí, México

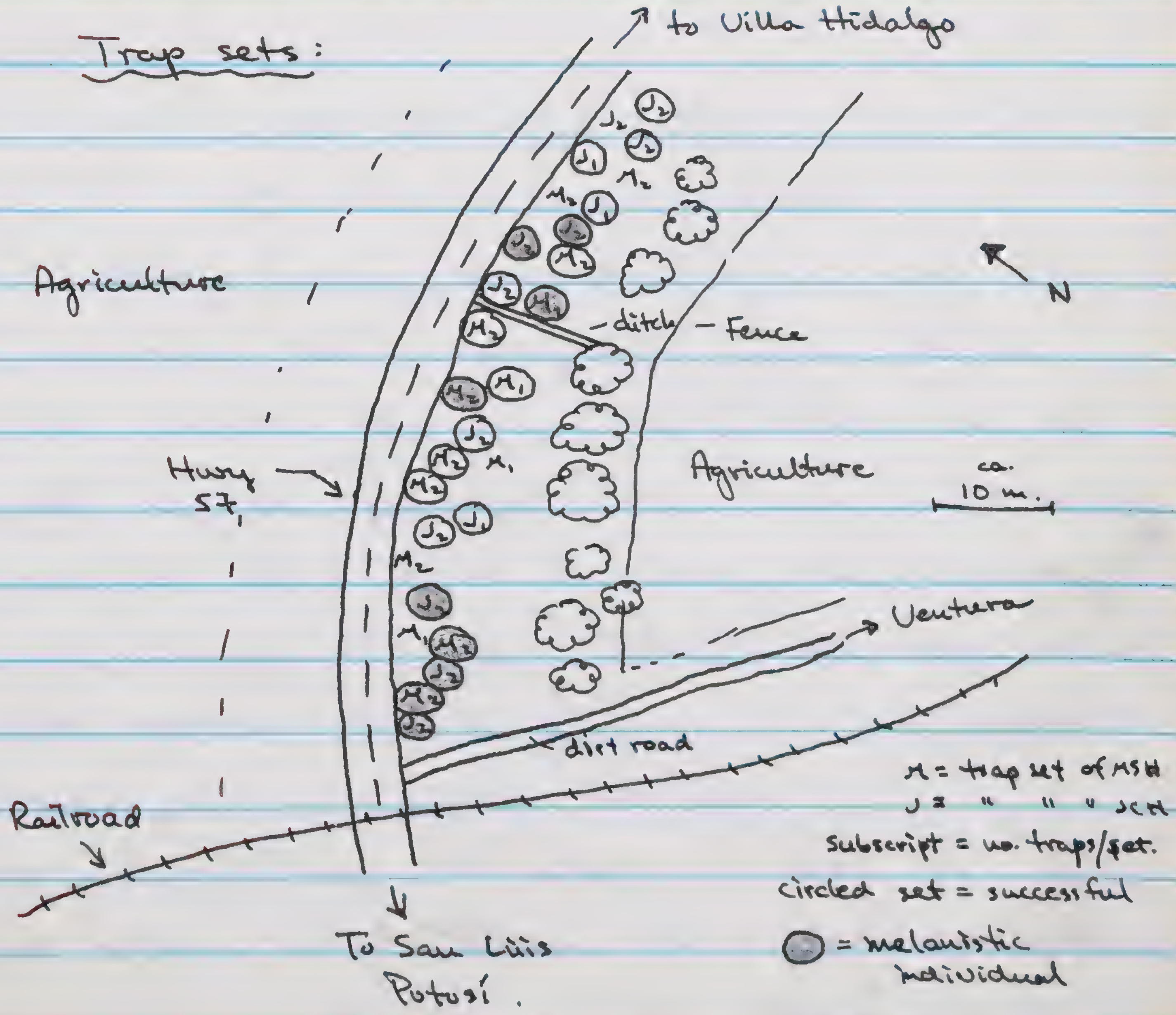
25 July (con't) The habitat was basically low grasses, almost lawn-like, with occasional small mesquite bushes. The natural habitat was mesquite - *Opuntia* desert. Much of the surrounding land was now in agriculture.

Map of trapsite:

General locality



Trap sets:



Journal

Hafner, M.S.
1977

Ventura, 1680 m., San Luis Potosí, México.

25 July (cont) About one-half of the gophers captured were totally melanistic, the others were deep brown. The melanistic individuals seemed to be rather clumped in distribution (see map).

We drove into Villa Hidalgo for a nice 18 peso dinner. We then returned to Ventura and slept on a side road near the Quarry. Awoke occasionally at night for passing trains.

Ventura, 1680 m., San Luis Potosí, México.

26 July 0545 awoke and drove to check gopher sets that had been left out over night. Final capture results:

22 *Thomomys umbrinus* (2 live)
(9 of which are melanistic)

We finished taking blood and tissue and at 0900 departed this locality. We drove ~~SE~~ SW on Hwy 57, through San Luis Potosí, (where we got food for the live specimens), then on westwardly on Hwy 70 to a point ~~on~~ along the highway 11 km. N, 12 km. E Arriaga. This is the area where we had spotted the diggings of a few gophers yesterday as we passed through.

We immediately set out 5 sets of live gopher traps, and placed the prepared specimens in the hot sun to dry. After about an hour

Journal

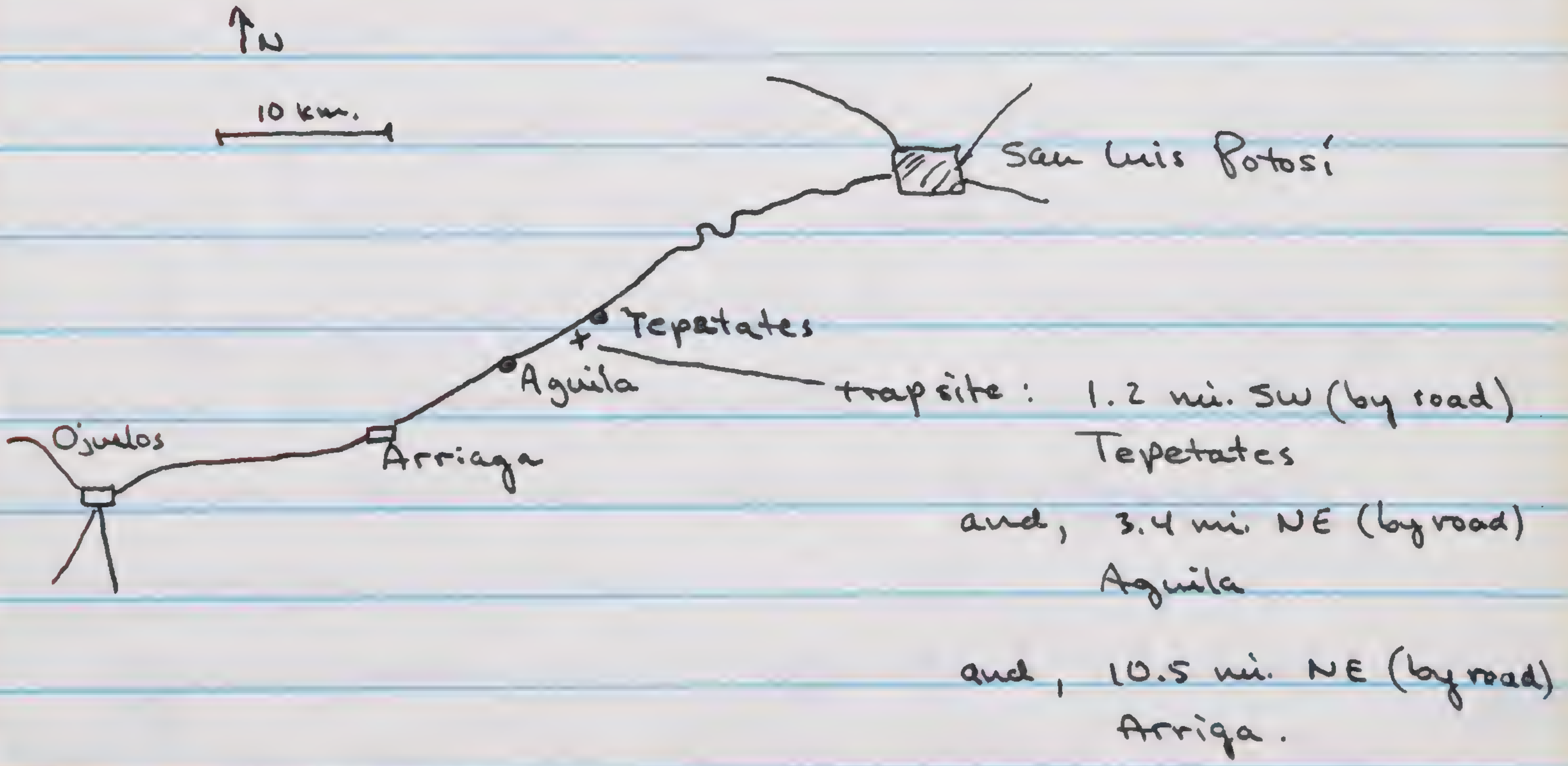
Hafner, M.S.
1977

11 km. N, 12 km. E Arriaga, 2030 m., San Luis Potosí, México.

26 July (con't) of waiting, and several plugged traps, we decided to try to pad a few MacAbee traps with cotton and tape in order to catch live specimens. (Since this race of T. umbrinus is supposedly different from the animals at Ventura (25 July), we only cared to get one or two specimens for karyotyping and tissue analysis — obviously, considering the low pop. density, we can't get the sample of 20 specimens necessary for a thorough analysis).

The habitat at this locality was basically Mesquite-Opuntia desert. We were in the large basin of Arriaga. Vegetation was sparce, soil rather light in color.

Map of locality:



Journal

Hafner, M.S.
1977

11 km. N, 12 km. E Arriaga, 2030 m., San Luis Potosí, México.

26 July (con't) By 1400 we had capture 2 specimens, one alive (in the padded-MacAbee) and one dead (also in the padded-MacAbee).

Results: 2 *Thomomys umbrinus*

We took tissue and blood from the dead specimen, then drove west to Ojuelos where we turned S on Hwy 49 toward ~~H~~ Dolores Hidalgo. We drove through beautiful high desert countryside (much of which was in agricultural use) and stopped occasionally to look at the small towns along the way (Ocampo, San Felipe). 1600 drove into Dolores Hidalgo. Got fuel, then continued S and W on Hwy 110 toward Guanajuato. Our next *Thomomys* locality is located near Santa Rosa, in the mountains NE of Guanajuato. After a long, twisting journey through the mountains we arrived in Guanajuato ca. 1730 Hrs. The nearby habitat is mixed Oak-Pine forest, mostly oak. We noted occasional stands of Manzanita (*Arctostaphylus*).

Guanajuato is a beautiful, crowded city built on the SW facing slopes of the main ~~two~~ N-S mountain chain of the Sierra Madre Occidental. It is a colonial

Journal

Hafner, M.S.
1977

Guanajuato, Guanajuato, México.

26 July (con't) city with many castle-like structures of stone. Several beautiful motels/hotels are situated on the steep mountain-side over-looking the city. We drove into the "Centro" area looking for a moderately priced motel in which to do our karyotyping. We ~~pro~~ promptly got lost and ended-up in an underground road system (built of large pieces of stone with cobblestone streets) which seemed to completely underlie the city. We eventually found our way out of the underground system and returned up the mountainside (as we had entered town) on the road toward Dolores Hidalgo.

1800 Checked into a nice motel on the hillside. Karyotyped and prepared specimens, had a nice dinner and retired 2200.

Vicinity of Guanajuato, Guanajuato, México.

27 July 0600 awoke and spent the ~~morni~~ morning preparing specimens.

1200 departed Guanajuato and drove NE on Hwy 110 to the small town of Santa Rosa. (This is a Goldman locality for *T. umbrinus*) We turned-off and drove down the steep mountainside, past the small settlement of

Journal

Hafner, M.S.
1977

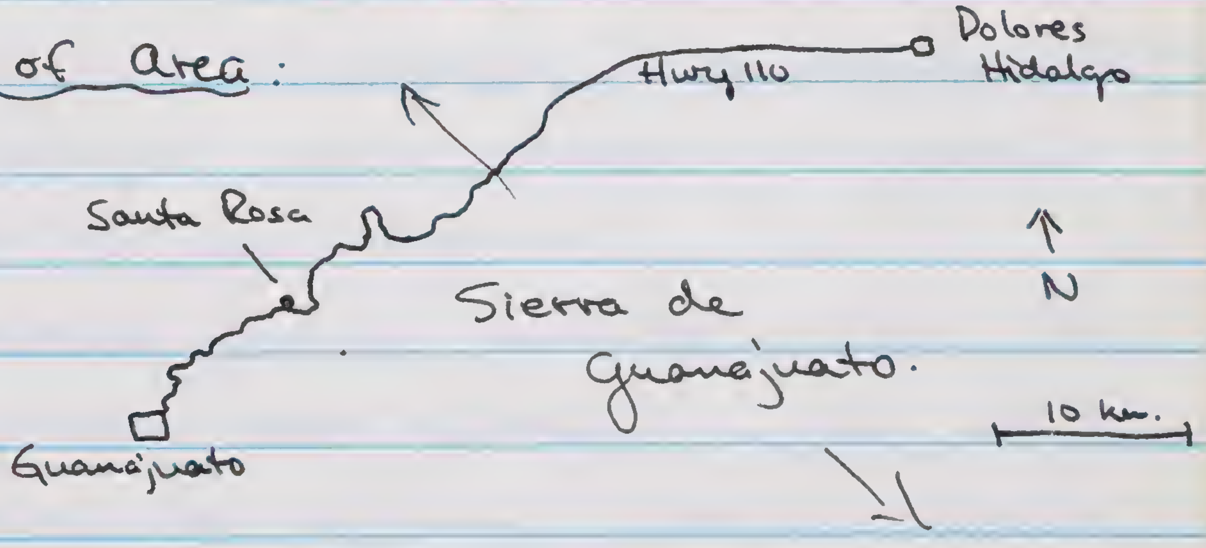
Vicinity Guanajuato, Guanajuato, México.

27 July (con't) Santa Rosa to the floor of a narrow valley. There was much mining activity in the valley (many caves) with every piece of open land (even on steep hillsides) put to agricultural use. We searched the valley and adjacent hillsides for signs of gophers — none were found. The habitat and soil characteristics did not seem suitable for Thomomys.

We drove back up the dirt road to Santa Rosa. A large and very old Cathedral sits in the center of the very small settlement. We could find no gopher evidence in the surrounding natural or agricultural vegetation.

1300 departed Santa Rosa.

Map of area:



We drove SW on 110 to Guanajuato then connected with Hwy 45 south of Silao. We now overlooked the beautiful plain of El Bajio which spread out to the NW and SE of us; a vast, level area punctuated with large (Acacia ?) trees. The habitat

Journal

Hafner, M.S.
1977

En Route; Guanajuato, Gto. to Morelia, Mich., México.

27 July (con't) in this area would seem quite suitable for Thomomys, though we saw no signs. We continued south on Hwy 45, through Irapuato to Salamanca. We then turned S on Hwy 43 to Valle de Santiago, where we stopped to look at local merchandise. We continued south past the laguna de Yuriria and entered Michoacán. It began to rain as we crossed the bridge (land bridge) over Lago Cuitzeo — a very large lake. We noted fishing nets and dug-out boats on the lake shores.

1900 entered Morelia after picking-up fresh water several miles north of town. We ate a nice dinner adjacent to the main Plaza and later looked at local merchandise. We each bought small statues of indian-like figures. (125 pesos = $5.50 US).

2030 we walked around town for awhile then drove a few miles west of town on Hwy 15 to camp alongside the highway. Very comfortable, slightly cool evening. Almost full moon, clear, light breeze.

En Route: Morelia to Pátzcuaro, Michoacán, México.

28 July 0530 awoke, very wet from dew. We were both quite cold throughout the night. We

Journal

Hafner, M.S.
1977

En Route: Morelia to Pátzcuaro, Michoacán, México.

28 July tend to forget the high elevation of the México Plateau. We drove west on Hwy 15 to the town of El Correo where we took the turn-off toward Lagunillas. Via a sometimes bumpy, other times smooth road we soon arrived in Pátzcuaro. 0800 had breakfast and went over trapping plans for the next few days. Our main goal is to get a sample of T. umbrinus from the area of the type locality for the pullus race (Hall and Villa). We will also attempt to get a small sample of Pappogeomys gymnurus and hopefully Liomys.

Pátzcuaro is a beautiful city (small) located on a gentle hillside overlooking the large Lago de Pátzuaro. Apparently, fishing is a large industry in the area with Pescado Blanco being ~~featured~~ featured at every restaurant. The town is centered around 2 large Plazas very close to each other — the buildings are of the old Mexican-spanish architecture with huge wooden beams and thick rock walls. We found the town to be especially pleasant due to general sanitation and a complete absence of trucks, crowds of people, etc. in the city center. 0900 we drove on Hwy 120 South of Pátzcuaro in search of the gopher

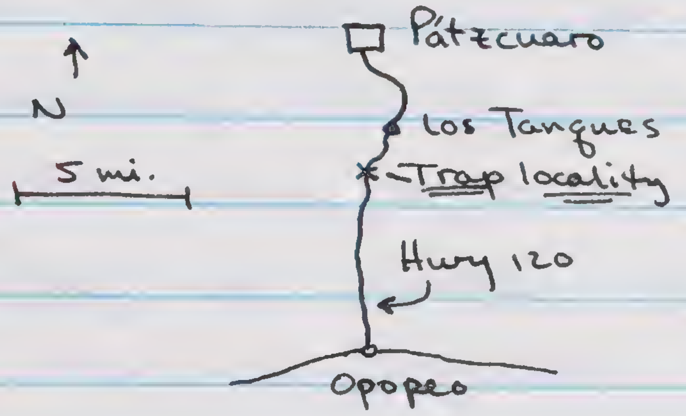
Journal

Hafner, M.S.
1977

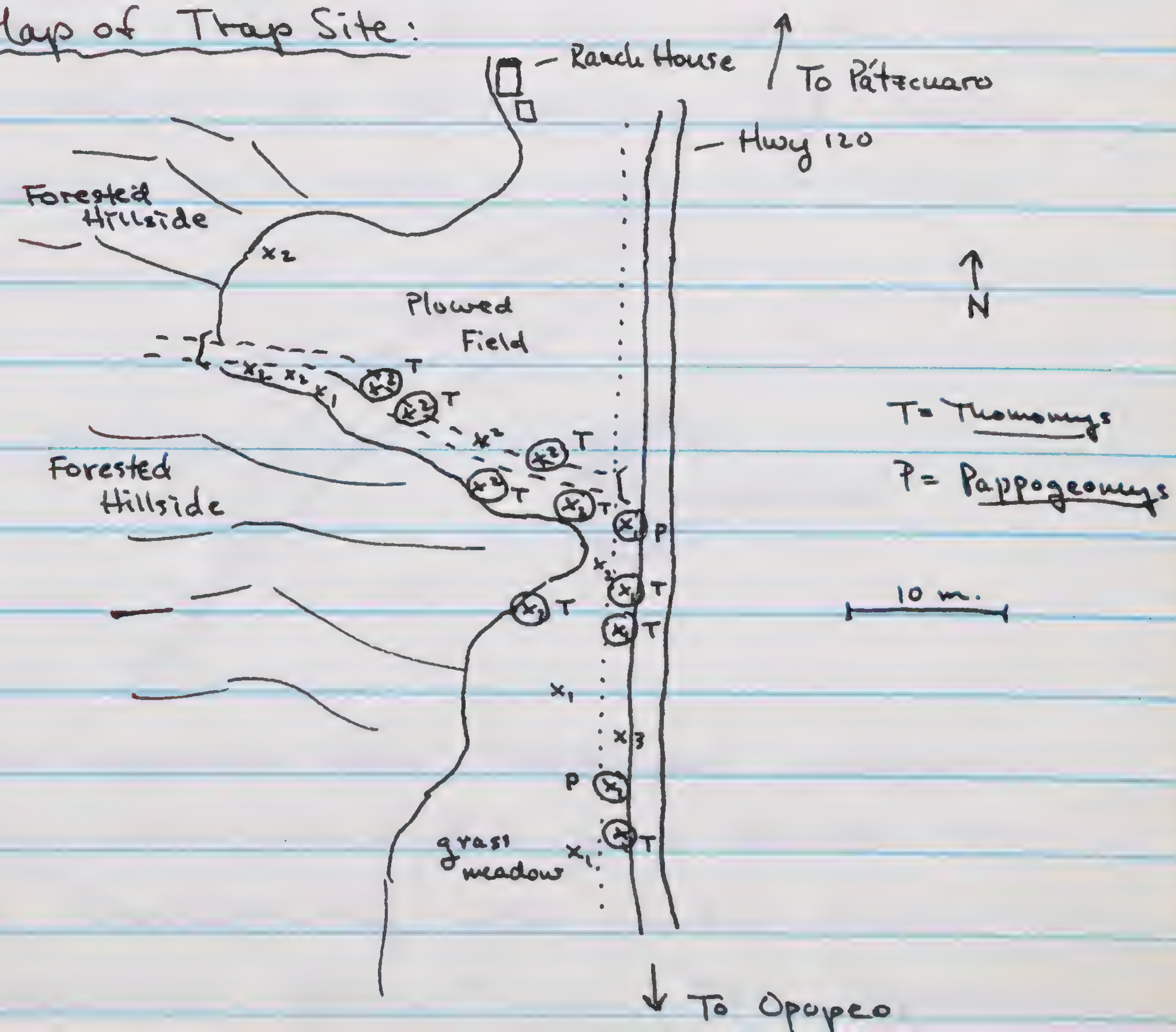
6.5 km. S. Pátzcuaro, 2200 m., Michoacán, México.

28 July (cont) locality. We looked-over the habitat between Pátzcuaro and Opopeo (about 15 km. S. Pátzcuaro) and noted much Thomomys and/or Pappogeomys evidence along the road cut. We returned along Hwy 120 to a point 1.7 mi. (by road) S of Los Tanques (the above locality).

Map of General Area:



Map of Trap Site:



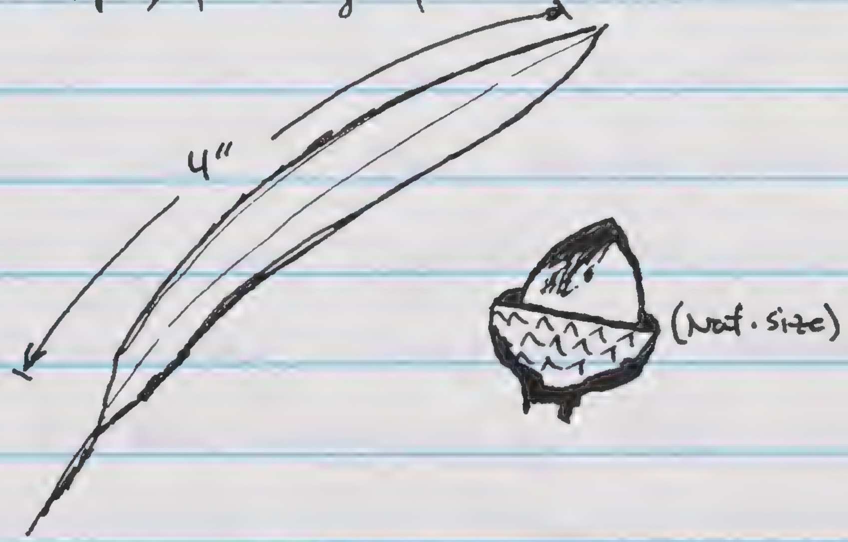
Journal

Hafner, M.S.
1977

6.5 km. S Pátzcuaro, 2200 m., Michoacán, México.

28 July (con't) 1500 it began to rain heavily. We continued work and found the vehicle to be a fairly nice laboratory during inclement weather. By 1700 ~~whe~~ we had a total of 15 Thomomys (1 alive) and 5 Pappogeomys (all alive). The one live Thomomys was captured in a padded Macabee. The Pappogeomys were all captured by one forefoot. The extreme size of the Pappogeomys was amazing. (One that JCH captured was larger than any on record in Hall and Kelson 1959). The Pappogeomys would not fit into the live gopher traps so we were forced to carry them back to camp in ~~on~~ our trap-bags; Their biting was rather damaging to the bags.

The habitat in this region was mostly oak (Quercus sp.), large, narrow leafed forms:



There were a few scattered conifers in the nearby woods, but the oaks seemed to dominate. Everything was quite mesic — the underbrush quite thick. The Thomomys

Journal

Hafner, M.S.
1977

6.5 km. S Pátzcuaro, 2200 m., Michoacán, México.

28 July (con't) and *Pappogeomys* showed a slight tendency to habitat segregate, but this was not always apparent. It seemed to me that the *Thomomys* were most often (although not always) in coarser soils and in areas nearer to the woods. The *Pappogeomys* were almost exclusively in the larger meadows. There was no difficulty telling the two mound types apart, the *Pappogeomys* had very large mounds, and the *Thomomys*, very small. (The size of the *Thomomys* specimens was also unusually small -- see Catalogue). Habitat segregation or not, *Thomomys* and *Pappogeomys* were captured side by side and were in almost every sense of the word — Sympatric.
1800 we decided to leave our 7 sets out for the night. We then set out 100 Sherman traps, 50 in the mesic canyon just to the west of our gopher trapping area and 50 ~~xx~~ on the somewhat dryer hillside to the east of the highway. We drove into town, had a very nice dinner — met an old man from Monterrey, Nuevo Leon — talked for awhile, then we drove back out to the trapping locality and slept. Very moist, cold night.

Journal

Hafner, M.S.
1977

6.5 km. S Pátzcuaro, 2200 m., Michoacán, México.

29 July 0600 awoke, very cold and wet... The bags were soaked. We checked Sherman traps:

Results:

1 *Peromyscus* sp.

Success: 1/100

The *Peromyscus* was quite large - on the order of *P. californicus*. The animal was released... We were quite disappointed as we had hoped to catch *Liomys*.

We next checked the gophers traps:

Results: 2 *Thomomys umbrinus*

Total: 17 *Thomomys umbrinus*
4 *Pappogeomys gymnurus*

All *Thomomys* were small, dark individuals; It looked as though we had many juveniles. The *Pappogeomys* were of 2 color types - 1 very black, the other deep brown.

The local people collected pitch from the conifer trees using small (6" dia.) clay pots. The tree was slashed (for about a meter) and the clay pot was afixed beneath the vertical wound. Of course, the pot also collected much rainwater, but the pitch

Journal

Hafner, M.S.
1977

6.5 km. S Pátzcuaro, 2200 m., Michoacán, México.

29 July (con't) seemed to remain in a neat layer beneath the water. (I found two old pots in the forest and brought them with me.).
0800 we returned to Pátzcuaro, had breakfast, then checked into a very nice motel (220 pesos = $10.00 US) on the main road into town. We immediately injected the animals to be karyotyped (0930), set the skins atop the van to dry, showered, then set to work.

We worked throughout the day preparing specimens. I noted that the specimens of *Pappogeomys*, especially the two sub-adults had incisors with faint, but noticable secondary, medial sulci... *Pappogeomys* are said to be unisulcate. The *Thomomys*, or many of them anyway, had faint medial grooves, also.
1900 departed motel to ~~to~~ find a place to eat dinner. Eventually found a very nice restaurant overlooking the upper town plaza.
2130 Retired, quite tired.

6.5 km. S Pátzcuaro, 2200 m., Michoacán, México.

30 July 0700 awoke, drove into town for breakfast, then returned to the motel to spend the morning packing specimens and catching-up on our journals. 1230 departed Pátzcuaro.

Journal

Hafner, M.S.
1977

En Route: Pátzcuaro to Uruapan, Michoacán, México.

30 July (con't) We headed west from Pátzcuaro, through the wooded, hilly countryside to Uruapan, a rather large city on the SE slopes of Mt. Tancítaro. This town is not at all like Pátzcuaro, but rather is crowded and dirty like so many other Mexican towns. We stopped for fuel and supplies then asked for directions to the road that would take us toward Mt. Tancítaro. Of Course, directions were terrible, but we eventually stumbled upon the correct road.

We drove to a point about 1 mi. E of Nuevo San Juan where we noted gopher (Pappogeomys) diggings along the road. Our main interest in this area is to search-out and trap Zygogeomys, a rather obscure genus of gophers with a very small range. (Including Mt. Tancítaro and NE to Nahuatzén).

We each set out 6 sets and in a short while I captured a Pappogeomys; Actually, the animal escaped the trap, but as I was pulling the trap from the hole, the animal returned to plug the entrance. I noted the unisulcate incisors characteristic of Pappogeomys. Since Zygogeomys were apparently not here, we pulled traps and continued SW'ly

Journal

Hafner, M.S.
1977

10 mi. (by road) SW Nuevo San Juan, 2220 m., Mich., México.

30 July (con't) into Nuevo San Juan. We there asked directions to the main road (now gravel-dirt), and we were shown (lead) to a man from Minnesota, who had moved to Nuevo San Juan 6 years ago with his wife. He was very interested in our work and told us that he had been "associated" with the Mus. of Nat. Hist. (U. of Minn.) several years back... status unknown. His name was Dick Bartholomé (sp?). We were asked inside where we met his wife. We stayed only momentarily and at 1730 we drove SW'ly toward Mt. Tancítaro.

1800 the road was in very poor condition. We (we noted *Pappogeomys* evidence all along the roadway). eventually stopped at the above locality. We noted numerous ranches along the way; many with newly planted orchards. We set out 6 gopher sets apiece in small meadows adjacent to the road. The native vegetation was mostly conifer-oak stands, with occasional areas of moist chapparal. The soil was very soft, moist and loamy.

1830 I captured one *Pappogeomys* specimen, again with faintly bisulcate incisors. The ~~pt~~ pelage of this specimen was much more sparce than that of the *Pappogeomys* from near Pátzcuaro. The guard hairs were readily

Journal

Hafner, M.S.
1977

10 mi. SW (by road) Nuevo San Juan, Michoacán, México.

30 July (con't) obvious. The animal was somewhat smaller (subadult). We pulled the gopher sets and 1900 proceeded to set out 100 Sherman traps in the sloping meadow NW of the road. The vegetation was basically soft (moist) chapparal with scattered small pines. It appeared that part of the field had once been in agriculture.
1930 fog set in. Light rain. We had roasted hot-dogs for dinner. 2100 slept.

10 mi. SW (by road) Nuevo San Juan, Michoacán, México.

31 July 0600 awoke after a nice night's sleep. Checked Sherman traps after re-setting MacAbees.

Results: no captures

Success: 0/100

A local had stolen 2 of our Shermans. People are everywhere and cannot be trusted.
0700 pulled all gopher traps.

Total: 1 *Pappogeomys* ~~taylorhinus~~ tylorhinus

At least, according to Russell (1968), we had a different species of *Pappogeomys* from that at Pátzcuaro. We drove back through Nuevo San Juan to ~~the~~ Uruapan where we turned N on Hwy 37. We are determined to get *Zygogeomys* so we'll try the type locality of Nahuatzén (Merriam 1895).

Journal

Hafner, M.S.
1977

En Route: Uruapan to Nahuatzén, Michoacán, México.

31 July (con't) We drove through the beautiful forested mountains north of Uruapan through the town of Paracho de Verduzco (billed to the the "guitar capital of the world" — we saws dozens and dozens of guitar shops). We then turned SE out of the small village of Cherán toward Nahuatzén. The town is located in a scenic valley between volcanic ridges. Much of the valley floor is in corn. We stopped at a point: 1 km. N, 2 km. W Nahuatzén, 2220 m., Michoacán, México.

We each put out 6 gopher sets in the loamy soil adjacent to the roadway and in the nearby plowed fields. The holes were quite obviously those of Pappogeomys and in sight of 1 hour JCH had a live Pappogeomys. We pulled traps disappointedly (as we as yet have not obtained a Zygogeomys sample) and headed south again on Hwy 37.

Total: 1 Pappogeomys ~~tylorhinus~~ tylorhinus

1230 We decided to give one more try for Zygogeomys. We thought that perhaps Hall and Villa (1949?) had trapped on the western slopes of Mt. Tancítaro (rather ~~that~~ than the southeastern slopes where we were last night). We decided to approach the western slopes of Mt.

Journal

Hafner, M.S.
1977

6 km. N, 2 km. W Tancítaro, 2000 m., Michoacán, México.

31 July (con't) Mt. Tancítaro via the dirt road heading west from approximately 16 km. N. Uruapan to Peribán de Ramos. The road was quite rough and a heavy mid-day rain added to the discomfort. We passed Angahuán which a local "guide" told us served as the base camp for pack trains of tourists to see the volcano (?). Anyway, we finally arrived in Peribán de Ramos where we re-fueled and turned south toward Copetiro. At Copetiro, we drove SE'ly along a fairly nice dirt road to Apo. The road in Apo and soon after was terrible. We managed to get about ¼ mi. SE of town before stopped by a washout.

We parked and walked across a log bridge and then up a steep, muddy road to a point about 0.1 miles beyond the creek. It was raining lightly as we passed some local boys carrying a dead Tree Squirrel (sp.?). The fog soon set in as we began setting traps in the fields (meadows) to the east and west of the dirt road. Both meadows had, in the past, been under agricultural use. There was now a fairly thick layer of low grass with occasional small shrubs. Pine trees were fairly sparce, as were the oaks. The rain continued, on and off all evening.

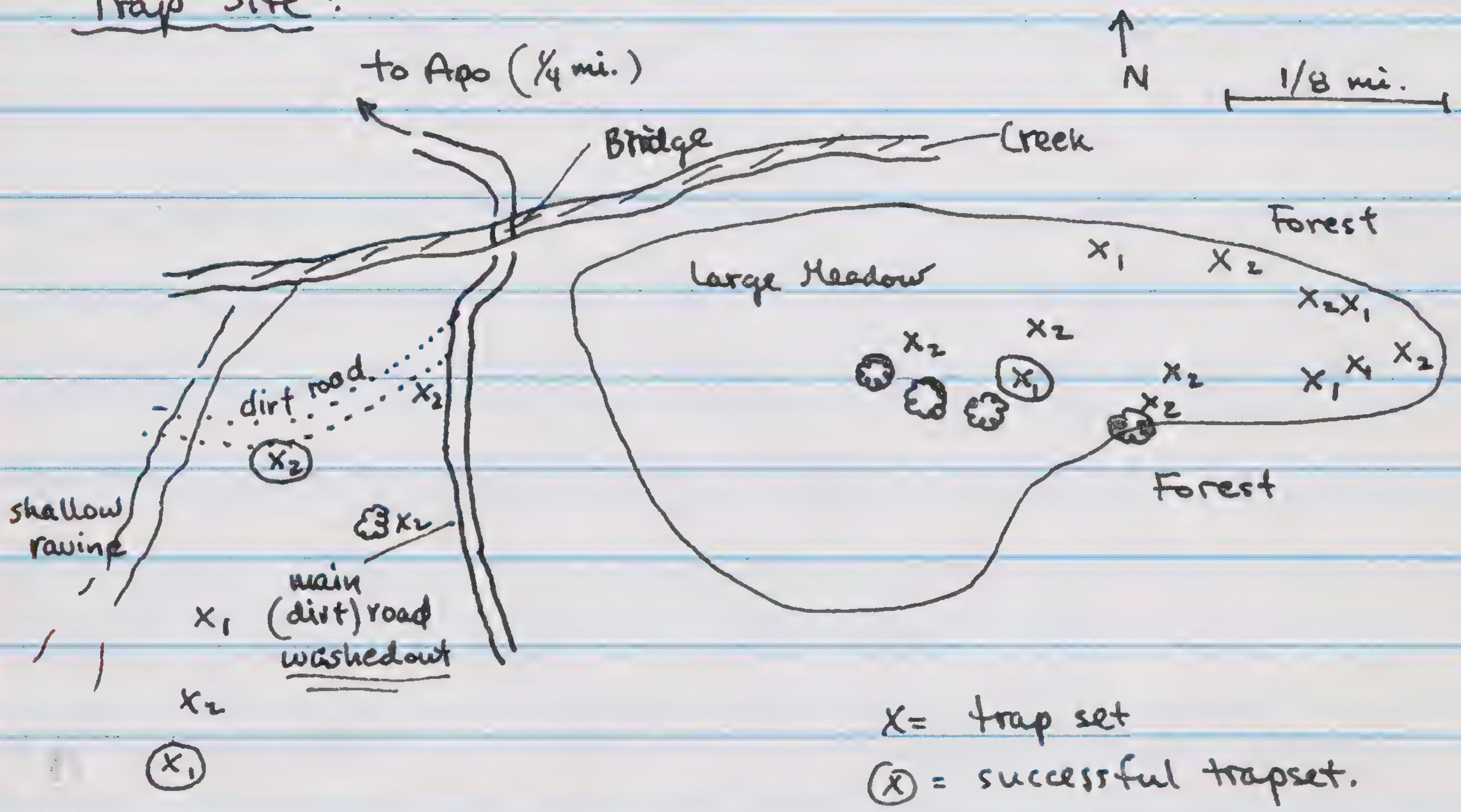
Journal

Hafner, M.S.
1977

6 km. N, 2 km. W Tancítaro, 2000 m., Michoacán, México.

31 July (con't) Map of trap locality:

Trap Site:



By nightfall we captured 1 *Zygogeomys* specimen. We were quite pleased. We slept comfortably through a cool, damp evening.

6 km. N, 2 km. W Tancítaro, 2000 m., Michoacán, México

1 August 0615 awoke and checked gopher traps (which had been left out over night.

Results: 3 *Zygogeomys gymnurus*

Journal

Hafner, M.S.
1977

6 km. N, 2 km. W Tancítaro, 2000 m., Michoacán, México.

1 August (con't) We were quite pleased with the 3 *Zygogeomys* specimens but decided to leave our sets out for an hour or two to catch the morning activity.

The gophers were especially thick in the upper end (eastern end) of the large meadow (see map). However, we did not get any sign of activity from this area. The mounds of this animal are, by the way, very peculiar – they are extremely high and "volcano" shaped. The tunnel ~~extened~~ extends, generally to the very apex of the pile of earth. The soil is very friable, and perhaps for this reason some of the burrows were quite large in diameter. The size of some burrows made us suspect *Pappogeomys*, but I feel that *Zygogeomys* is here alone.

The animal, itself, bears extensive description. The fur is very "mole-like" – dense, thick, erect and dull grey in color. The eyes appear deep-set in the dense fur. The nose is large with a distinct "cross-shaped" (+) indentation. There is a small, naked patch of skin immediated posterior to the nose. The rostrum is long, giving, in my opinion, the general appearance of a wombat's head. The

Journal

Hafner, M.S.
1977

6 km. N, 2 km. W Tancítaro, 2000 m., Michoacán, México.

1 August (con't) tail is long and totally naked; the forefeet are unusually large.

1130 we pulled all traps after an unsuccessful morning. Departed locality and ~~barts~~ barely managed, with the help of some "locals", to get to the town of Apo; The hill was steep and muddy entering town.

We drove N via Los Reyes (where we re-fueled) to the town of Zamora. We then drove SE via Hwy 15 through beautiful forested country, past the large Lago Pátzcuaro, to Morelia. It rained the last hour of the trip.

After much searching and driving in the town of Morelia we found a place to have our laundry washed. We checked into an inexpensive motel (125 Pesos = $5.50 US) on the NE side of town and proceeded to process and karyotype the 3 Zygogeomys specimens and the 2 Pappogeomys specimens (1 from Nuevo San Juan, 30 July, and 1 from Nahuatzén, 31 July).

2130 had a very nice dinner and retired.

En Route: Morelia, Michoacán to Toluca, México, México.

2 August 0630 awoke and spent the morning preparing specimens. To our disappointment, all the Zygogeomys were ♀ sexually inactive — our hopes for

Journal

Hafner, M.S.
1977

En Route: Morelia, Michoacán to Toluca, México, México.

2 August sperm and ♂ reproductive tracts from this rare animal were lost.

1200 departed motel. Ate a nice lunch in Morelia, then drove east on Hwy 15 toward Toluca, México. The road was all but deserted, for some reason?. The road twisted and turned through high forested mountains until finally settling on the fairly level high plateau at Ciudad Hidalgo.

1500 arrived vicinity of Toluca, México. We turned S at Mextepec, a small Puebla about 8 km. W Toluca. We proceeded about 8 km S then turned west on Hwy 130. We drove about 12 km. further then turned due S on the road labeled Hwy 3 (toward Texcaltitlán). (Our AAA road map was quite inaccurate in this vicinity and it is fortunate that we brought Mexican state maps).

At a point 0.5 mi. S Raices we turned SE on the dirt road to Nevado de Toluca. We drove 2.2 mi. (by road) SE until arriving at Parque de los Venados, a large, inactive park. We noted both Thomomys and Pappogeomys diggings so immediately set out several sets apiece. The natural habitat was patches of conifer forest with large areas of bunch-grass. Most of the gopher diggings were in these latter

Journal

Hafner, M.S.
1977

18 km. S, 12 km. W Toluca, 3500m, México, México.

2 August (con't) areas of bunch-grass about 0.7 m tall and from 0 to 1 m apart. It seemed to me that Pappogeomys diggings were most commonly in the areas of dense bunch-grass growth, while Thomomys seemed to be in the more sparce areas — this was, by no means, a rule. By sunset we had captured: (both JCH numbers).

2 Thomomys umbrinus (1 live).

It was getting quite cold, so we built a fire and retired early. Traps were left out.

18 km. S, 12 km. W Toluca, 3500m, México, México.

3 August 0630 awoke. Checked and pulled traps. No success. It had been a very cold night (below freezing). From this locality we could easily see the top of Vulcán Toluca, looming above us to the SE. There was no snow that we could see. 0730 departed locality & drove back to Hwy 3. We then proceeded N on Hwy 3 to a point 3.0 mi. N (by road) Raices. (Also 1.2 mi. S (by road of the intersection of Hwy 3 and Hwy 130.) We decided to try this lower locality instead of the higher one — perhaps gophers are more dense here (ie. Thomomys). We were located in a rather large meadow part of which was in agriculture, the remained was

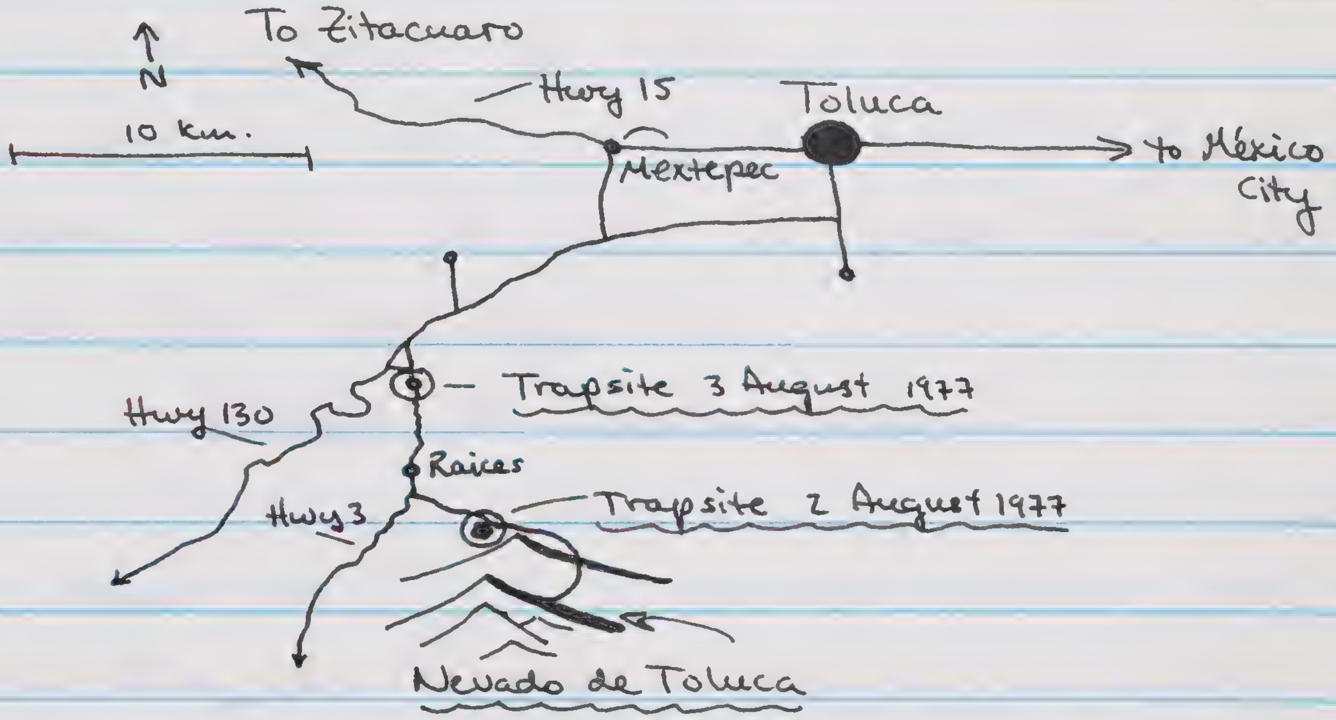
Journal

Hafner, M.S.
1977

10 km. S, 16 km. W Toluca, 3000 m., México, México.

3 August. (con't) currently "resting". Thomomys (and a few Pappogeomys) were fairly dense in the bare field just ~~to~~ to the w of the main road. There was also considerable activity in an adjacent field with a high (2 ft.) growth of Mustard.

Map to this and preceeding locality:



We trapped all morning and until about 1430 Hours. At this time we had a total of 19 Thomomys ~~bott~~ umbrinus from this locality, 3 of which were alive. The day was beautiful, light breeze, cool with warm sunshine.

In digging up gopher burrows in the soft, dark, ~~friable~~ soil, I uncovered the nest of one individual. The nest was of finely shredded grasses (brown) and about 180 - 200 mm in diameter. It was located

3 August (con't) at a depth of about 300 mm below the surface. It appeared to have only one entrance. In another burrow system I uncovered a cache of bulbs and (roots, etc) such, most of which were now sprouted. The bulbs were about 2 cm. in diameter. The cache, itself, was in a sealed-off chamber about 100 mm in diameter and 80 mm. below the surface.

We set the skins out to dry in the warm afternoon sun. At 1430 we pulled traps and departed the locality:

Results: 19 Thomomys umbrinus

We drove to Toluca, through the city, then NE on Hwy 130 toward Naucalpan, a suburb of México City. We were in need of liquid Nitrogen for our tissue and blood samples and we were told we could get some in Naucalpan. The road to Naucalpan climbed over the mountains separating Valle de Toluca from Valle de México. The road was narrow, rough and crowded. 1630 we finally arrived in the dirty, industrial city of Naucalpan. After an hour of hunting for the "Argon Gas Co." we finally located it in an obscure section of town. The local people were of little

Journal

Hafner, M.S.
1977

México City, Distrito Federal, México.

3 August (con't) use as far as directions were concerned. Of course, by this hour the "Argon Gas Co." was closed for business; they told us to return in the morning.

We drove to another section of town, had a nice dinner, then drove a few miles back out of town (as we had come in) and pulled-over at the roadside. We skinned animals until well after dark and only later realized that 3 of the 4 live animals from today's trapping had died — probably of heat (as we had them between the front seats on the floor, just behind the engine). We were quite disappointed as 1 of those that died was a ♂ (nice for karyotyping) and the sole survivor was a ♀ from the higher elevation locality of yesterday. Slept well through a comfortable night.

México City, Distrito Federal, México.

4 August Awoke 0630, put-up several skins before driving into Naucalpan to get the liquid N_2. After a light breakfast we returned to our pull-out west of Naucalpan and finished ~~proceed~~ processing the gophers from yesterday. We karyotyped our last surviving specimen, so as ~~t~~ not to risk it dying. The sun

Journal

Hafner, M.S.
1977

México City, Distrito Federal, México

4 August (con't) was shinning brightly by the early afternoon so we set the skins atop the van to dry. 1430 packed-up and drove into México City proper. We first drove to the ~~Museo~~ Museo de Historia Natur and briefly walked through — the exhibits were nice, but not extraordinary. The scientific collection is apparently stored at the University. We later drove over to the ~~Museo de~~ Museo Nacional de Antropologia and spend a few hours looking at the huge array of exhibits. We saw many, many of the large stone Aztec carvings including the "Aztec Calender". We also were able to see beautiful pottery work and numerous figurines of gold, jade, obsidean, serpentine, etc.

We later drove to the center of town and had a very excellent meal at a nice, high-class restaurant — about (200 pesos = $9.00 us). We drove, then, over to the Hotel Ensenada and called home. Everything is fine with Darcy, Emily and Julia. We had a cup of coffee and then drove out of town toward Puebla. (via Hwy 190). There was light rain as we entered the toll road from México City toward Puebla.

Journal

Hafner, M.S.
1977

En Route: México City, D.F., to Rio Frio, México, México

4 August (con't) 2130 we pulled-off the road just outside Rio Frio, México after re-fueling and 2230 retired.

Rio Frio, México, México.

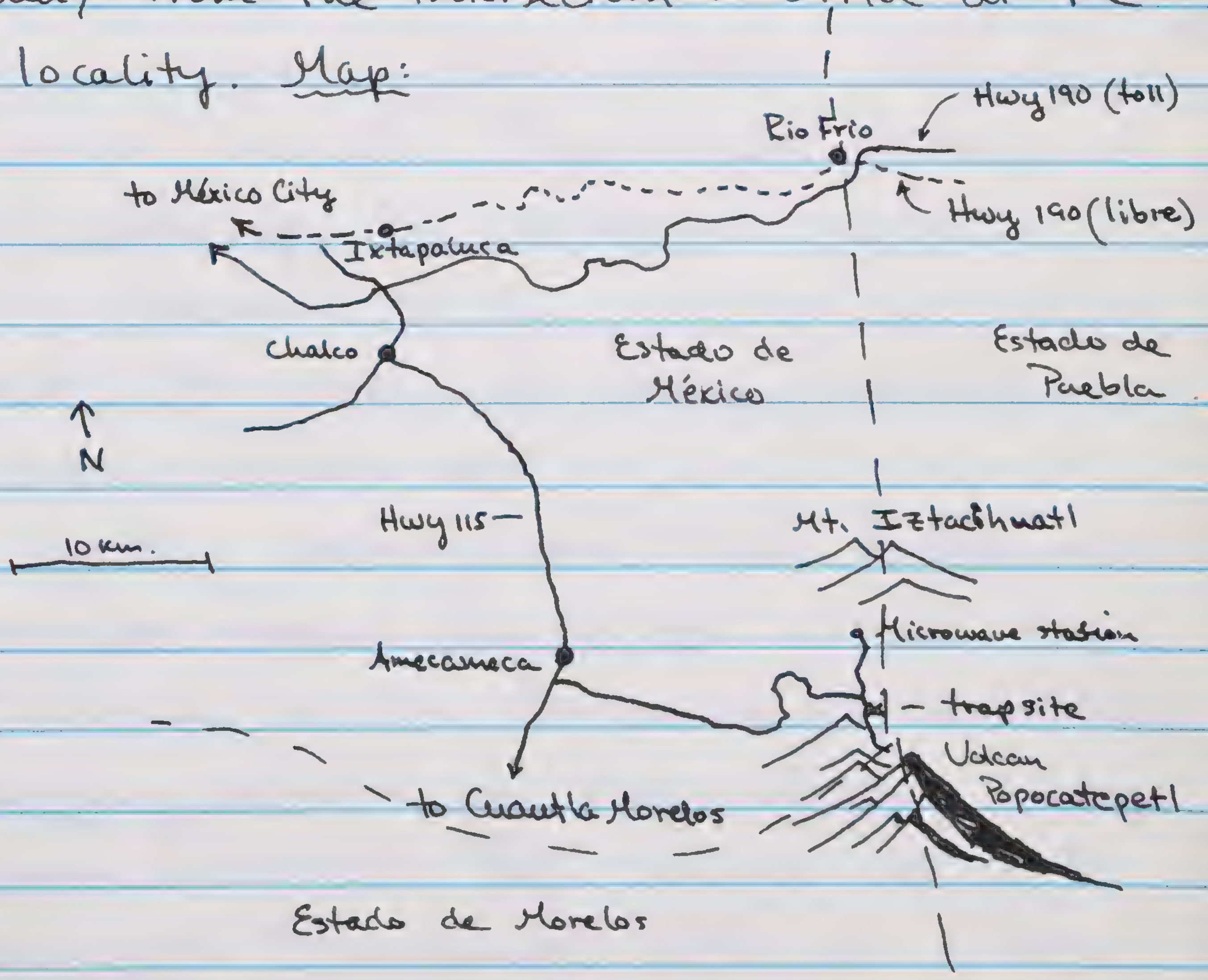
5 August 0630 awoke. Immediately noted gopher mounds in our vicinity. JCH soon discovered that all the diggings were those of Pappogeomys. The mounds were exceedingly ~~thick~~ thick in this area (just W. of Rio Frio (Centro) on Hwy 190 libre). We drove east on Hwy 190 libre (ie. not the ~~too~~ toll road) and noted gopher diggings (Pappogeomys) most of the way in meadows and fields adjacent to the road. We stopped at a point 5 mi. NW (by road) San Martin Texmelucan where we discovered Thomomys diggings. The animals were too sparse in numbers to warrent our trapping so we continued east into San Martin. We turned around just after entering town and decided that perhaps we should try for T. u. volcanus on the north slopes of Volcán Popocatepetl (17,761 ft. elev.). We drove west, (re-tracing our steps), to Rio FRio, stopping occasionally to search for Thomomys signs. We then drove just west of the town of

Journal

Hafner, M.S.
1977

5.5 km. S, 13 km. E Amecameca, 3680 m., México, México.

5 August (con't). Ixtapaluca where we turned S on Hwy 115 towards Chalco. We continued S on Hwy 115 and stopped for supplies in the town of Amecameca. About 2 km. S of Amecameca we turned SE on the paved road to Volcan Popocatepetl. We climbed through the forested slopes of Volcan Popocatepetl to an elevation of 3680 m. (almost at timberline). At the intersection at Paseo de Cortéz (25 km. (by road) from Amecameca) we turned S on the road toward Volcan Popocatepetl. The other direction led toward a microwave station and Mt. Iztacihuatl to the north. We drove 1.1 mi. (by road) from the intersection to arrive at the above locality. Map:

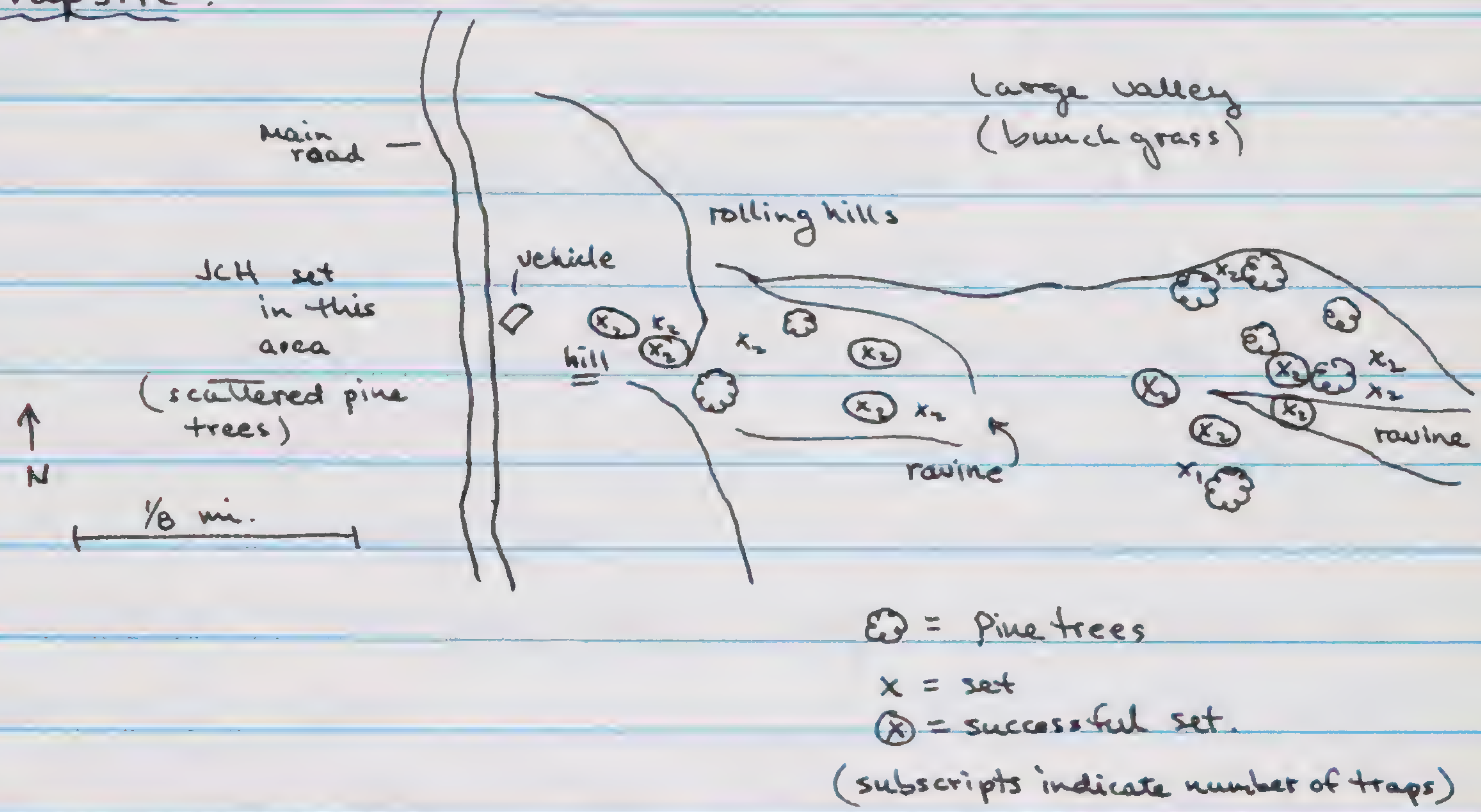


Journal

Hafner, M.S.
1977

5.5 km. S, 13 km. E Amecameca, 3680 m., México, México.

5 August (con't) Trapsite:



1500 we set out about 15 gopher sets apiece, John on the west side of the road, I on the slopes to the east. The vegetation was principally bunch-grass with a few scattered Lupine and other annuals. There were patches of conifers although the principal gopher activity seemed to be in the unforested meadows. The soil was "ashy", formed of fine, dark volcanic ash.

We quickly were aware that *Pappogeomys* were again present due to the extreme large size of certain of the burrows. We concentrated our trapping efforts on the obvious, smaller *Thomomys* burrows. By sunset we had pulled-in 12 *Thomomys umbrinus*, 3 of which were alive. The animals were

Journal

Hafner, M.S.
1977

5.5 km. S, 13 km. E Amecameca, 3680 m., México, México.

5 August (con't) somewhat larger and more densely furred than those from Volcan Toluca. It was soon raining and very cold.

2030 we made our final check of the traplines for the night. (The traps were then to remain out over night) I used the lantern, but was nevertheless easily disoriented as I stumbled through the fog and wind to find my sets.

2100 Drove down the mountain to reach warmer country. Slept well just outside Amecameca.

5.5 km. S, 13. km. E Amecameca, 3680 m, México, México.

6 August 0630 awoke, drove back up to Volcan Popocatepetl. a very chilly, windy morning. Checked traps:

Total Results:

18 Thomomys umbrinus (3 alive).

We took tissue and blood then departed this locality. We drove S on Hwy 115 to Cuautla, where we had breakfast. We then turned east on Hwy 160 to Izucar de Matamoros, then S on Hwy 190. We were continually losing elevation as we

Journal

Hafner, M.S.
1977

En Route: Amecameca, México, to Huajuapan, Oaxaca, México

6 August (con't) traveled south of the great Mexican plateau. The habitat was much drier than I had expected at this latitude. Cacti and thorn vegetation dominated.

1500 we climbed through the dry hills of northern Oaxaca and entered the puebla of Huajuapan de León. This was a known Liomys locality (Genoways 1973) so we decided to trap here tonight and use this afternoon for preparing skins.

We walked around town of a few minutes and bought 2 inexpensive (5 pesos = 25¢) woven baskets. After buying some refreshments, we drove just north of town and prepared specimens.

1900 - Drove to set out sherman traps. Stopped at a point 5.4 mi. N (by road) Huajuapan de León, Oaxaca, México, where we set out 100 sherman traps in the palm, opuntia, mesquite mountains. The ground was extremely rocky although there were patches of annual grasses wherever soil was sufficient.

2000 - Drove into town, had a nice dinner then camped north of town. Slept out. Awakened by occasional rain. Nice evening.

Journal

Hafner, M.S.
1977

En Route: Huajuapan, Oax. to Oaxaca, Oaxaca

7 August 0620 awoke and drove to check traps.

Results: ~~No ca~~

2 Peromyscus sp.

Success: 2/100

We were again disappointed not to have captured Liomys. We drove on south on Hwy 190 toward Oaxaca. The drive was very tiring, being entirely mountain roads — narrow at that.

1130 we entered the Valle de Oaxaca and attempted to locate Orthogeomys diggings north of town - no luck. We decided to try a known locality tomorrow (Cerro San Felipe) and to spend this afternoon touring the famous Ruins of Monte Albán. The ruins are located on a hilltop a few miles SW of the City of Oaxaca. We found them extremely fascinating — large pyramids, (Zopotec and Mixtec cultures, 300-800 BC.) courtyards, sunken ball courts, tunnels, stairways, etc. It rained on-and-off as we walked about the ruins; we decided to return tomorrow morning to get better photos (less people, no rain).

1500 we drove into town. As this was election day, we had a difficult ~~de~~ time

Journal

Hafner, M.S.
1977

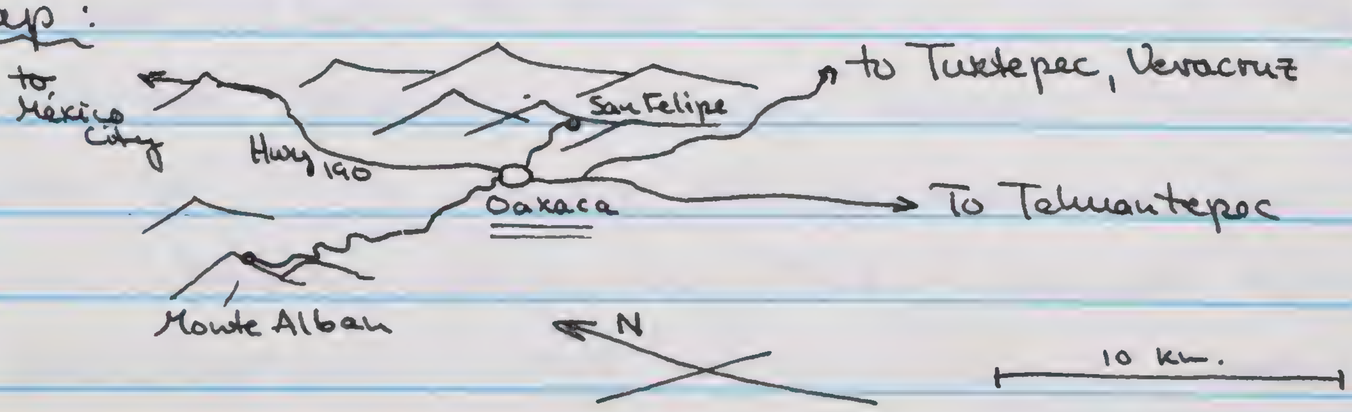
Oaxaca, Oaxaca, México.

7 August (con't) finding a place to have a beer. We finally had a meal — and a few beers to cool off. We are now considerably lower in elevation than on the plateau — the temperatures are correspondingly higher.

1630 checked into the Hotel Bel-Air on the mainroad just north of town. I showered, John slept.

1630 drove to set traps for Liomys (again). Monte Albán was a known locality for Liomys (Genoways 1973) so we returned up the road towards the ruins. We set out 100 shermans in the arid, thorn scrub vegetation on a hillside s of the road about ½ mi. from the actual ruins. I found a marsupial skull, probably Didelphis sp. as we decended the hillside just after sunset. Warm, clear night. Many fireflys about. We drove back to our motel and relaxed for the evening.

Map:



Journal

Hafner, M.S.
1977

Monte Albán, 1850 m., Oaxaca, México

8 August 0630 awoke and drove to check traps.

Results: 7 *Liomys irroratus* (1 released)
1 *Baiomys* ~~sp.~~ *musculus* (released)

Success: 8/100

The *Liomys* were captured in some of the densest vegetation on the hillside. They were caught in "clusters" of 2-3 individuals, also. The dominant vegetation was thorn-forest type (Mesquite, Acacia, *Opuntia*) and much dense annual grass in places.

0745 drove further up the road to the Monte Albán ruins (Zapotec & later, Mixtec cultures) to take photographs. We were the only visitors to the entire ruins for the first ½ hour so we had the opportunity to take some nice photographs uncluttered by people.

0900 drove back into Oaxaca, where we had breakfast — typical slow, unconcerned service. We then exchanged money at a local bank. Upon our return to the car we found that a VW had pinned-us-in by double-parking behind us. We waited of several minutes then we bodily picked-up the front of the VW and turned it out of our way. People stood by and watched — as happens everywhere.

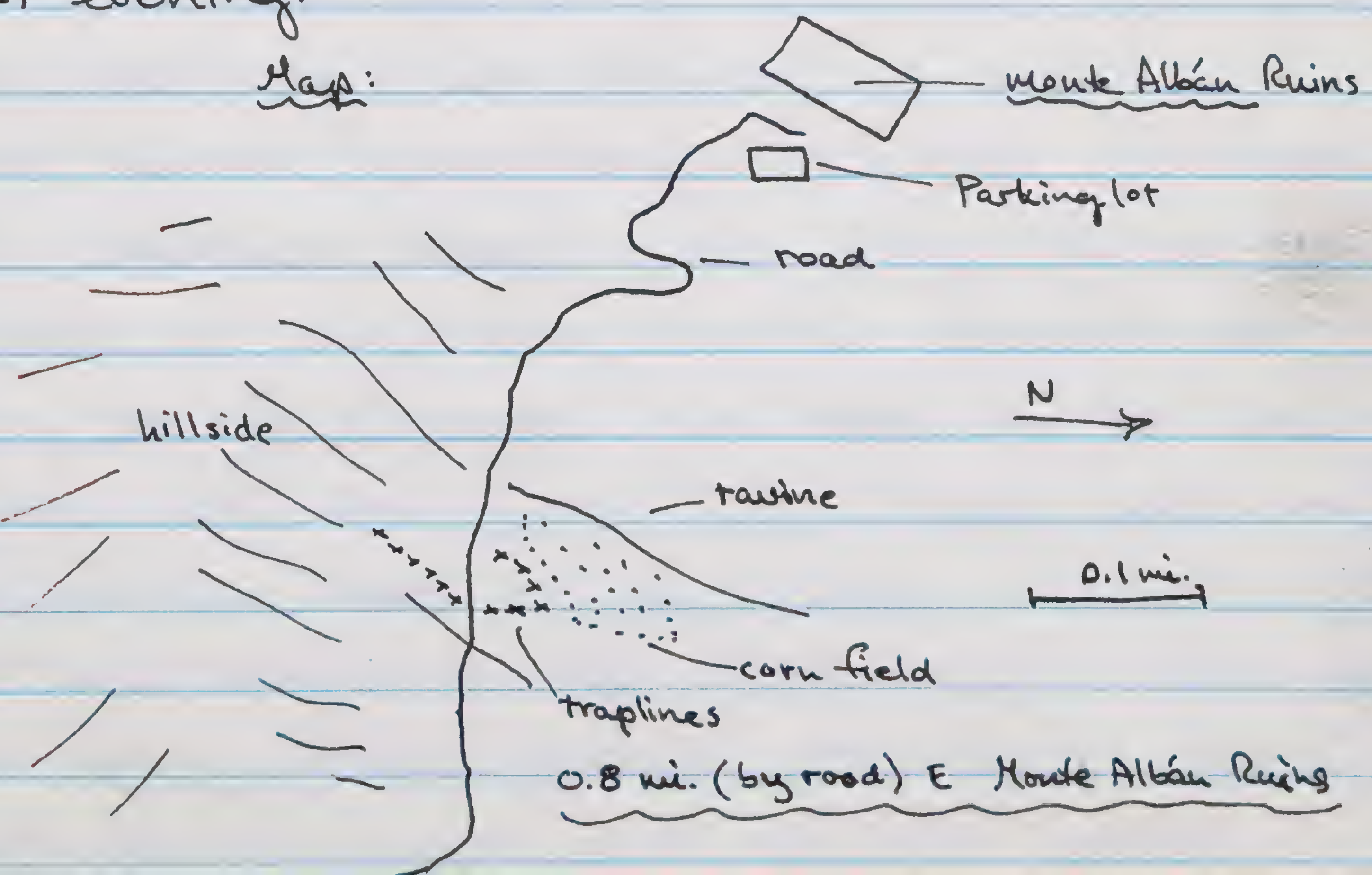
Journal

Hafner, M.S.
1977

Oaxaca, Oaxaca, México

8 August (con't) We drove back to the motel and karyotyped the *Liomys* plus the *Thomomys* from Volcan Popocatepetl.
1445 departed the motel and attempted to locate "Cerro San Felipe" a locality for *Orthogeomys*. We followed the road past the small Puebla of San Felipe del agua a few miles east of Oaxaca, but it ended before we were at a sufficient elevation. We drove back toward Oaxaca, stopping outside of town to finish preparing specimens.
1800 stopped in town for a few beers then drove up toward Monte Albán to re-set sherman traps for the night. Set out 50 traps each side of the road (=100 traps) very near to where we trapped last evening.

Map:



Journal

Hafner, M.S.
1977

Monte Albán, 1850 m., Oaxaca, México.

8 August (con't) As I was setting a trap I noticed a piece of clay pottery - obviously very old, perhaps dating back to the Zapotecs (300 B.C.). We drove into Oaxaca, there had dinner, then returned to Monte Albán, where we slept the night. Clear, warm, evening.

Monte Albán, 1850 m., Oaxaca, México.

9 August 0600 awoke and drove 1/4 mi. to check traps.

Results: 6 Liomys irroratus
2 Baiomys musculus

Success 8/100

We searched the entire area for pottery and found some very interesting pieces. I also found a stone ~~~~ mortar and pestle (which I gave to JCH). Much of the pottery was finely made, although all ~~was~~ were mere fragments.

0900 departed Monte Albán and drove into Oaxaca for breakfast. Bought some pottery statues then headed S from town to the turn-off for Hwy 175 for Tuxtepec. We drove up the steep grade into the Sierra Madre Oaxaca until we reached the town of La Cumbre located at the summit of the western-most chain of the Sierra Madre Oaxaca. We drove just east of La Cumbre and set out gopher

Journal

Hafner, M.S.
1977

La Cumbre, 2740 m., Oaxaca, México.

9 August (con't) traps in an area of heavy Orthogeomys activity. The elevation was 2740 m. and the terrain was extremely sloped toward the south. Most of the Orthogeomys activity was concentrated in the fertile ravines rather than the rugged hilltops. Certain holes were extremely large (ca. 6" dia.) others were smaller. We generally set 2 MacAbee traps in each tunnel (side-by-side) to increase our chances of catching these large animals with such small traps.

The habitat was mixed Conifer-oak woodland, although there were large areas under (corn) agriculture. The Orthogeomys activity was high in and around these areas of ~~activit~~ agriculture. The soil was reddish in color, somewhat rocky, but apparently quite fertile.

We talked with a local farmer (he was, of course, barefoot). The local people kile these gophers with sling-shots, then eat them. He says they're good to eat. We had very little activity throughout the afternoon. We each had 8 sets out, so we set the skins out to dry, and caught up on the day's fieldnotes. Many heavy clouds, but no rain as of yet.

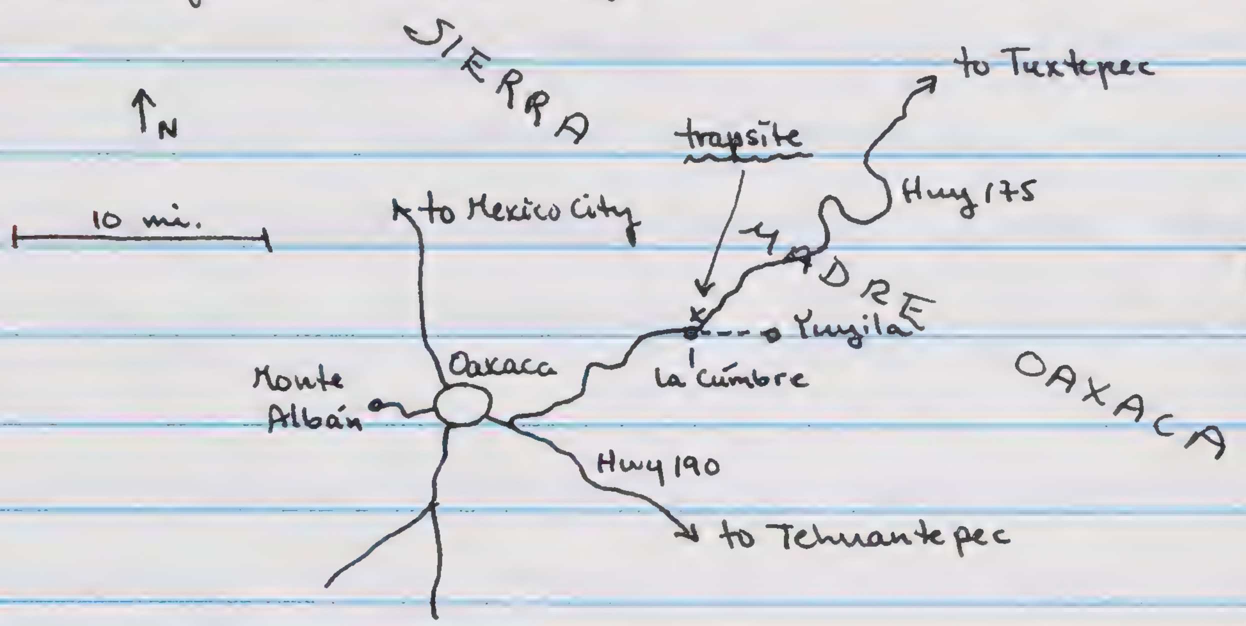
Journal

Hafner, M.S.
1977

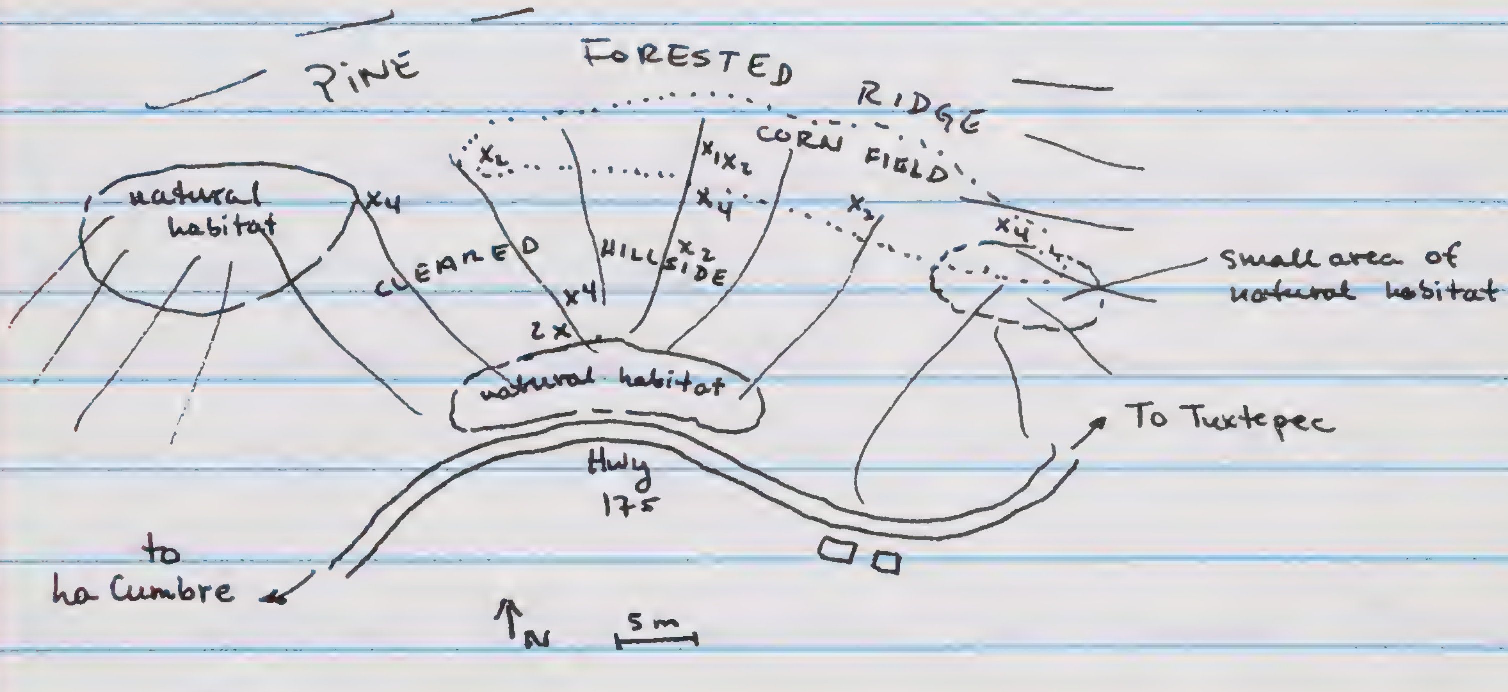
La Cumbre, 2740 m., Oaxaca, México.

9 August (con't)

Map of General Locality:



Map of Trapsite:



We trapped all evening and decided to leave the traps out overnight. No captures as of yet. JCH has had several traps set-off, I have had a few holes plugged. The fog set-in 1800. We walked into the village of La Cumbre (ca. 3 houses) and had a nice dinner at the local "restaurant".

Journal

Hafner, M.S.
1977

La Cumbre, 2740 m, Oaxaca, México.

10 August 0600 awoke and checked traps. No captures. We set out 7 Cinch traps (= large gopher traps) in place of MacAbees. It rained on-and-off all day. 1000 walked to La Cumbre for an inexpensive breakfast. Fog still fairly dense.

1200 - Several traps have been set-off. (including Cinch traps!) Other holes are being plugged... apparently these gophers are pushing large amounts of dirt ahead of them.

1800 Still no luck. Checking and re-checking traps in the occasionally pouring rain. We are both quite wet and muddy. I made some coffee in the later afternoon and we took short naps in the van while it rained.

2100 walked to La Cumbre for dinner. Dense, wet fog. Very depressing day. Much work, no Orthogeomys. Julia 2 months old today.

La Cumbre, 2740 m., Oaxaca, México.

11 August 0600 awoke, checked and pulled traps.

No Captures

We are quite disappointed. We have put in alot of effort for no return. Drove into

Journal

Hafner, M.S.
1977

En Route: La Cumbre, Oaxaca to Motzorongo, Veracruz.

11 August (con't) La Cumbre for a brief breakfast, said "adios" to the old senora and her daughter and drove east from La Cumbre on Hwy 175.

The Hwy is in good shape but very many curves. We climbed the Sierra Madre Oaxaca and entered cloud forest. The area was extremely wet .. streams, waterfalls, etc. We noted many bromeliads, palms, ferns, Philadendrons, etc. Very beautiful, dense forest. We picked-up 2 rhinocerous beetles along the road.

1200 arrived Tuxtepec after a 4½ hour journey from La Cumbre. We are now at a much lower elevation and it is quite warm and humid. The majority of the country in this region is planted in sugar cane and/or Pineapple. Much less corn. The ground seems to be permanantly wet — puddles of ~~wat~~ water everywhere.

We were planning to trap at Tuxtepec which is a known Heteromys locality, but since so much of the land was currently under agriculture, we decided to drive north to Motzorongo, another known Heteromys (and Heterogeomys) locality.

We drove north on Hwy 145 and stopped

Journal

Hafner, M.S.
1977

3.5 km N, 1.5 km W Motzorongo, Veracruz, México, 370 m.

11 August (con't) for supplies in Tierra Blanca, a large, dirty town. The roads in Veracruz are, by far, the worst we've encountered — to add insult, we had to pay 7 pesos as we entered the state (just outside of ~~Tux teep~~ tuxtepec) for the "privelege" of driving in Veracruz!

We turned west on the "paved" road from El Amate toward Acatlan. The road was a total maze of chuck-holes. It took about 2 hours to reach Tezonapa, then, after several wrong directions from locals, we were on the correct road for Motzorongo.

1600 drove through ~~Moto~~ Motzorongo and about 4 km N where we stopped in the shade of a large tree and prepared the Liomys (6) from Monte Albán (4 of which had died from the heat).

1800 we set out sherman traps in hopes of catching Heteromys. We were assisted somewhat by habitat descriptions in Hall and Dalquest (Mammals of Veracruz) but we decided to spread the traps over every possible habitat type. Since Heteromys is here at the extreme northern edge of its range, it is a quite rare animal. We

Journal

Hafner, M.S.
1977

3.5 km. N, 1.5 km W Motzorongo, 370 m., Veracruz, México

11 August (con't) set 50 traps in a grove of large coffee trees (covered with bromeliads) on the right (east) side of the road just along the river's edge. (about 3 km. N Motzorongo). The ground was somewhat bare, but had a spare "lawn" of annual grass. The trapline paralleled the river and those traps set right along the river were set near thickets of vegetation. (= Set ①)

We set another 50 traps in the jungle-like overgrowth of an old coffee-banana grove to the west of the road about 4 km. N of Motzorongo. There was a dense overstory of growth as well as a dense growth of vines and grasses on the ground. (= set ②)

We set another 50 traps in the native jungle at the above locality just about 50 m east of the road where the mountain slopes begin. The canopy is extremely heavy and the undergrowth dense. Numerous rocky outcroppings. (set ③)

An additional 50 traps were set in the open grassland between 2 sugar cane fields adjacent to the native jungle of set ③. The grassland consisted of Mimosa

Journal

Hafner, M.S.
1977

3.5 km. N, 1.5 km. W Motzorongo, Veracruz, 370 m, México.

11 August (con't) and several types of monocot grasses (and vines, too). Many of the traps we placed near the trees and bushes of a ravine passing through the center of the grassy area (= Set ④).

It was quite dark as we finished setting traps. We washed up at the river, noting many fireflys in the area. The air was extremely humid making out work quite uncomfortable. We drove into Motzorongo, had 2 beers and drove back to Set ① where we slept beneath the bromeliad covered coffee trees near the roadway. Heavy rains through the night. Warm and humid.

3.5 km. N, 1.5 km. W Motzorongo, Veracruz, 370 m. México.

12 August 0600 awoke and checked Set ①:

Results: Set ① = 1 Oryzomys palustris

Success: 1/50

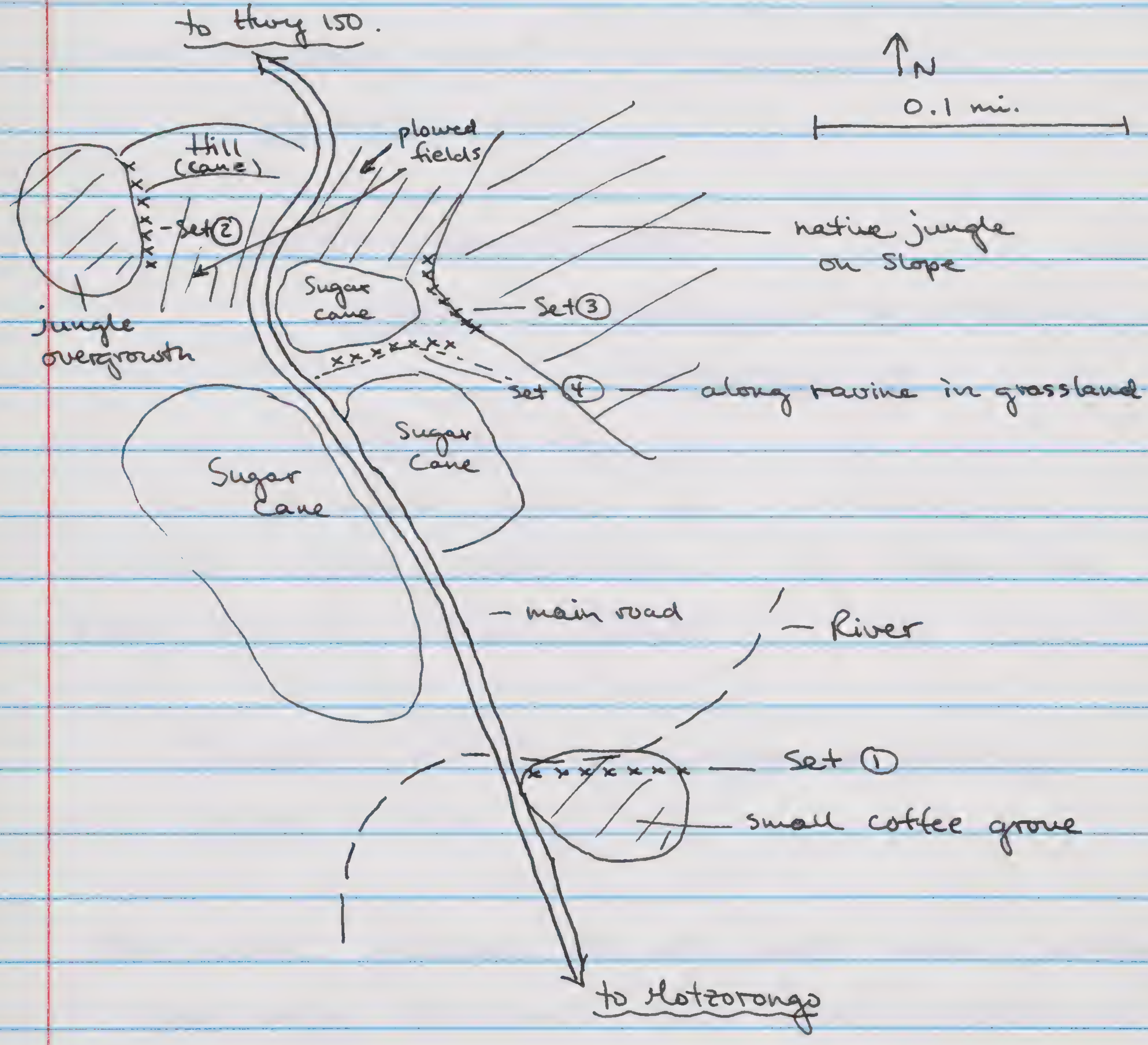
We had a difficult time getting out of the Coffee grove and back onto the main road. Local people stopped, but preferred to watch rather than offer help. The grass was extremely wet on a sloping hillside we had to clear

Journal

Hafner, M.S.
1977

3.5 km. N, 1.5 km W Motzorongo, 370 m., Veracruz, México.

11-12 August: Map of trapping locality:



Journal

Hafner, M.S.
1977

3.5 km. N, 1.5 km. W Motzorongo, 370 m., Veracruz, México.

12 August (con't) before we could return to the main road. Finally, a long, running "leap" allowed us to clear the bank.

We checked set ② = No captures

Success = 0/50

Set ③ (~~grass~~ Jungle)

Results = 2 Peromyscus sp. (released)
1 Heteromys sp.

Success: 3/50

The animals were all captured on or near rocky outcroppings just along the edge of the native forest.

Results: Set ④: 2 Oryzomys palustris
Success: 2/50

We were pleased to at least have captured 1 Heteromys specimen. We next packed-up and drove just south of Motzorongo where we noted Heterogeomys diggings to the west of the road. We each set out 5 sets apiece and waited until 1300 for results: no captures. 2 of my sets had activity, one animal set-off a Cinch Trap, but got away. We decided

Journal

Hafner, M.S.
1977

3.5 km. N, 1.5 km. W Motzorongo, 370 m., Veracruz, México.

12 August (con't) that we had not the time to wait for success here – especially if this was going to be a replay of our luck at La Cumbre (9-11 August). Apparent Heterogeomys (which is synonomized with (under) Orthogeomys by Russell 1968) don't respond to traps at this time of year. Dalquest caught them here in December; we feel we've put alot of effort into trapping Ortho's and now Heterogeomys and they are essentially "uncatchable" under these circumstances.

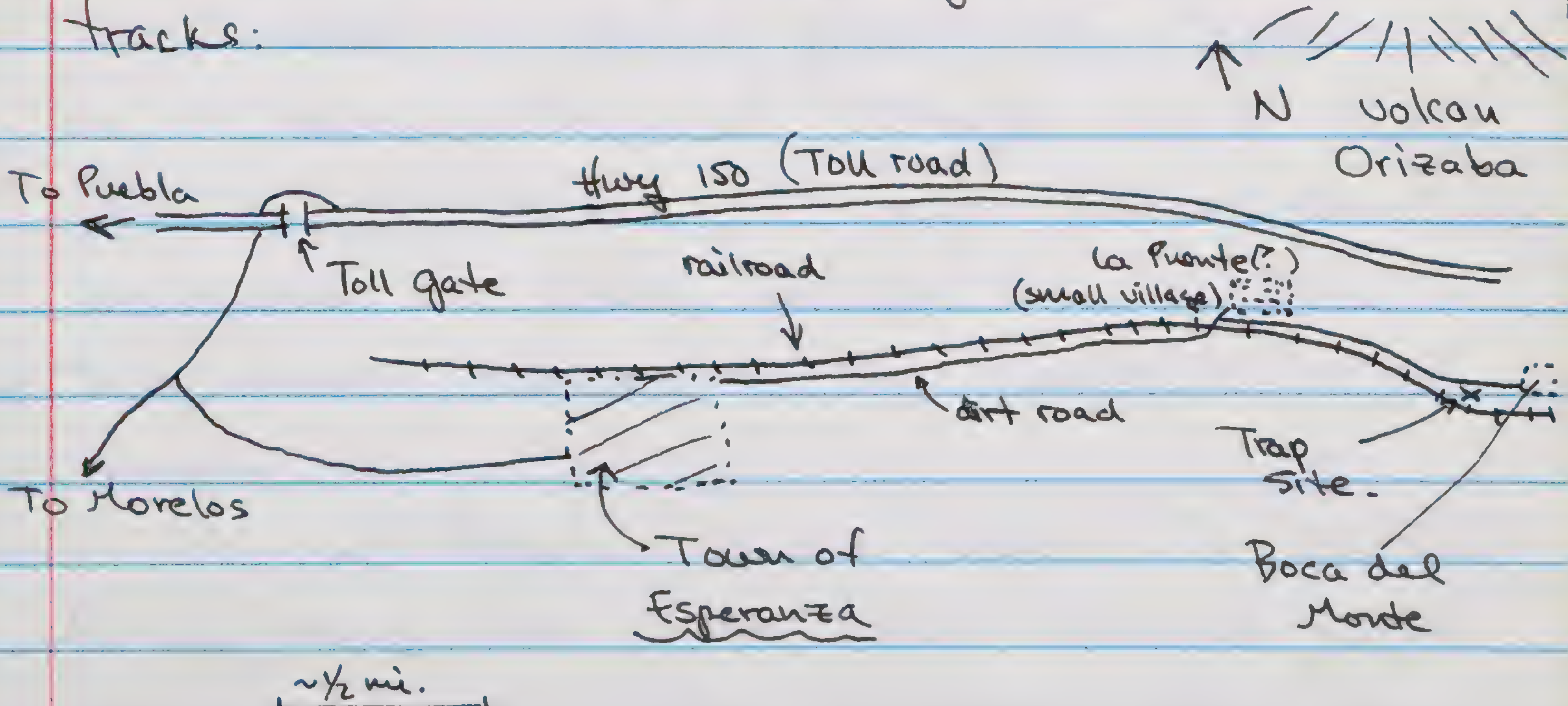
1300 packed-up and drove north from Motzorongo until connecting (2 hours later) with Hwy 150 (distance ca. 25 km.). The road was terrible – again a half-done job of paving resulted in a road covered with chuck-holes. We turned west on Hwy 150 and drove, via the toll road (9 pesos) to Orizaba, Veracruz. It rained as we entered town and searched for a motel. We were covered with mud and sweat from the last 4 days of work and eagerly awaited a chance to clean-up. 1700 checked into a nice motel near the toll road. Drove into town for dinner after showering. Rain most of the evening. Warm and humid.

Journal

Hafner, M.S.
1977

Orizaba, Puebla, México.

13 August 0600 awoke and immediately karyotyped the Heteromys specimen and one Baiomys specimen. Prepared skins of all specimens and @ 1000 packed-up and checked-out of the motel. Drove west on the "free" road toward Puebla and after about 20 miles realized that the road went SW in a very round-about way toward Puebla — we decided to return to Orizaba and take the ~~toll~~ toll road to Puebla. The road was narrow and windy as we climbed onto the Mexican Plateau. We turned-off the ~~toll~~ toll road at the toll station near the small town of Esperanza. After much searching for a road to the small (very small) town of Boca del Monte we finally found an old dirt road paralleling the railroad tracks:



<u>Journal</u>

Hafner, M.S.
1977

<u>Boca del Monte, 3.5 km. S, 3 km. E Esperanza, 2450 m., Puebla, México</u>

13 August (con't) Boca del Monte is the type locality for *Thomomys umbrinus umbrinus* trapped by Bailey in 1906. There is some question as to whether the town of Boca del Monte in Veracruz is actually the true type locality — however, the Boca del Monte in Veracruz appears to be at a low elevation and probably has no *Thomomys* — we prefer to stick with the Boca del Monte here in Puebla.

Boca del Monte is a small farming community consiting of a few houses and a train stop. The peak of Volcan Orizaba is at some distance to the NE and we are essentially on the shoulder of the Volcan. The terrain is generally rolling hills with occasional small valleys. After much searching we located a small pocket of Gophers in a narrow strip of Alfalfa about 1/4 mi. west of the center of town. Later searching uncovered a dense pocket of gophers in the small canyon to the immediate N of town.

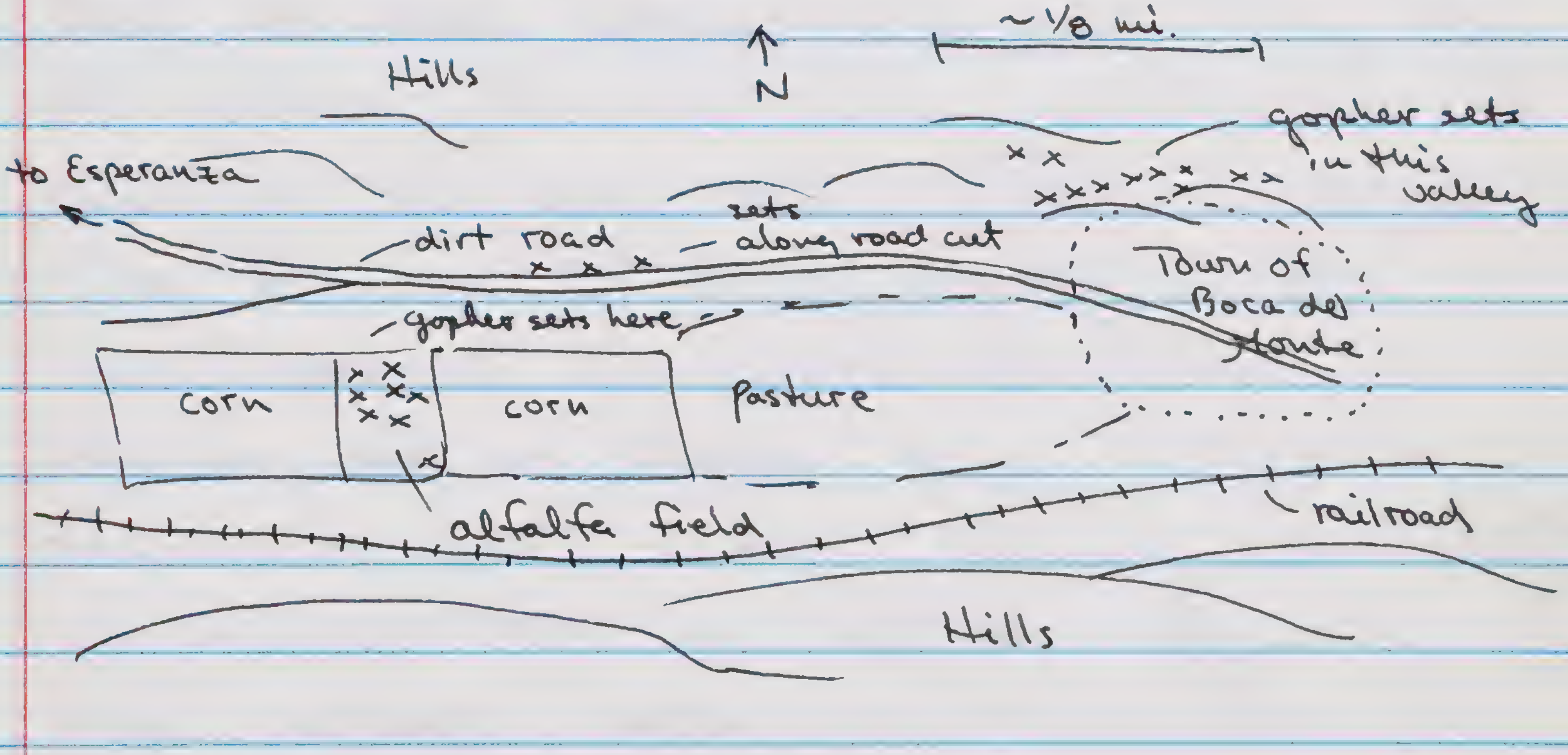
We set traps (12 sets apiece) in alfalfa fields, road cuts (3 sets) and natural (but grazed) hillsides. JCH captured both normal

Journal

Hafner, M.S.
1977

Boca del Monte, 3.5 km. S, 3 km. E Esperanza, 2450 m., Puebla, México.

13 August (con't) brown-colored gophers and melanistic gophers in the valley just N. of town. I captured only normal (brown) gophers in the alfalfa field and adjacent areas. By evening we had captured 10 Thomomys. The weather all afternoon was beautiful, warm (72°F), clear and with a slight breeze. Later Afternoon brought a buildup of clouds in the eastern sky. A dense fog ~~settled~~ set-in in the twilight.



Boca del Monte, 3.5 km. S, 3 km. E Esperanza, 2450 m., Puebla, México

14 August 0600 awoke and pulled traps. Captured ~~of~~ a total of: 17 Thomomys umbrinus this locality. Took tissue and blood, then packed-up and drove west (0730). Returned to Hwy 150 (Toll road) and headed towards Puebla.

Journal

Hafner, M.S.
1977

En Route: Boca del Monte, Puebla to Pachuca, Hidalgo, Méx.

14 August (con't) We stopped at noon in Puebla to view the ruins west of ~~town~~ Cholula. – not very spectacular after seeing Monte Albán. We bought some inexpensive wooden barrels, ~~then~~ returned to Hwy 150 D. At Los Reyes (just east of México City), we drove north to Pachuca, Hidalgo, arriving approximately 1500. We continued north of Pachuca into the Sierra de Pachuca where we searched for several hours for Thomomys signs. The valley near the small town of Real del Monte appears to be completely void of gophers, the soil being hard-packed and much of the area being planted in Agave. The town of El Chico, located on the NW slopes of the Sierra de~~t~~ Pachuca, is likewize void of gopher signs. (These ~~to~~ 2 towns are both known Thomomys localities). No habitat that we searched appeared even suitable, under present conditions, for Thomomys habitation.

2000 we returned to Pachuca, ate dinner, then drove out of town on Hwy 85 where we camped (alongside the road) for the night. Very cool, humid night. We were rather disappointed not to have located these gophers said to inhabit the Sierra de Pachuca.

Journal

Hafner, M.S.
1977

En Route: Pachuca, Hidalgo to Llera, Tam., México

15 August Awoke early and continued north on Hwy 85. A very long, winding road finally brought us to Tamazunchale on the east side of the Sierra Madre Oriental. We bought 2 bowls near this town for about 20 pesos each. The road leveled-off at this point and we continued north on Hwy 85 through Ciudad Valles to the area of Llera about 40 miles S of Ciudad Victoria. We took a dirt road toward the west that brought us to the locality:

13 km. S, 1 km W Llera, 450 m. Tamaulipas, México.

At this locality, we noted gopher signs in the cane and bananas (mostly in the cane). We set-out several sets apiece and monitered them until well after dark.

JCH finally captured one *Heterogeomys* alive at about 2030. We packed-up and headed north where we found a nice motel in Ciudad Valles.

Ciudad Valles, Tamaulipas, México

16 August We arose and karyotyped the *Heterogeomys*. After preparing the skin, we packed-up and drove NE on 180 (101) toward Brownsville, Texas.

Journal

Hafner, M.S.
1977

En Route Cuidad Victoria, Tam., México to Albuquerque, New Mexico.

16 August (con't) By this time our insurance in México had expired so we headed straight across the border (after exchanging money). We had no trouble at the border-crossing — only the American people cared to see our permits.
1400 - we ate at a "MacDonalds" — finally a clean place to eat!

We drove all night — through San Antonio and Abilene, Texas to Lubbock. (We pulled the "anvil hiest" in Judd at 0400 17 August).

17 August While John pick-ed-up some personal effects from a friend in Lubbock, I attempted to trap some Geomys just east of town. I caught one animal by the foreleg, but it managed to pull-loose.
1200 - pulled all traps without success and headed for Albuquerque, New Mexico. After a nice 1 day stay with Diane (Dave was in the field), we headed home. We arrived early in the morning 19 August after a long and successful trip.

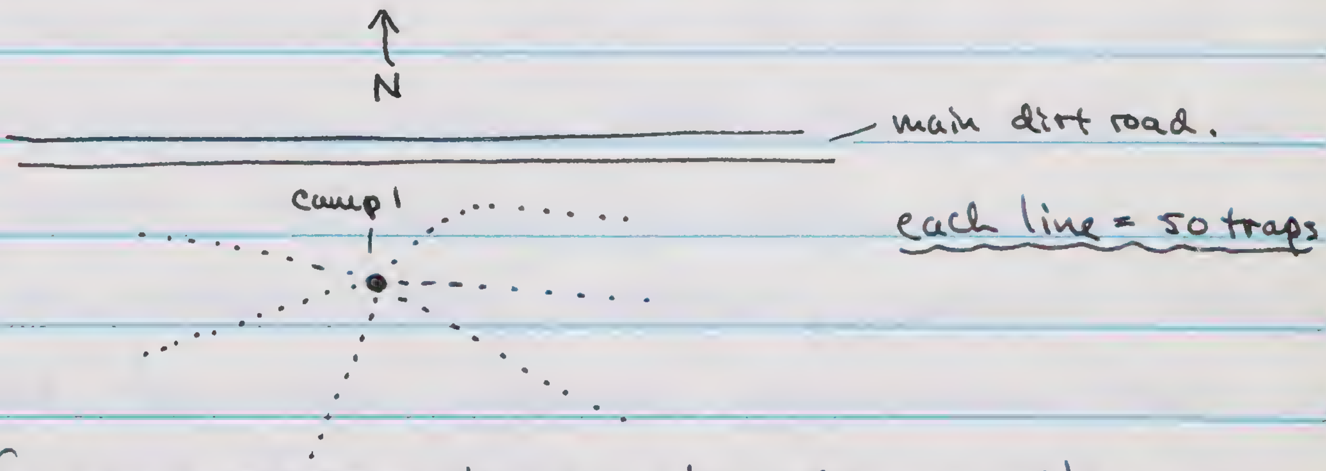
Journal

Hafner, M.S.
1977

2 mi. E Searles Station, 9 mi. NNE Johannesburg, San Bernardino Co., 3200', California.

7 October 0830 departed Richmond with Darcey, Emily, Julia, and Deb Lawhon. Drove to Pleasant Hill where we left Julia with Darcey's folks. 0930 departed Pleasant Hill and drove S via 680, 580 and Hwy 5 to junction with Hwy 46. Turned east on Hwy 46, stopped for supplies in Wasco, then continued to Hwy 99. Turned S to Bakersfield then east on 58. Beautiful, clear day in the valley. Drove over the Tehachapi Pass then N on Hwy 14. to the above locality. (Camp 1). Arrived 1630 and set-up camp. At 1700 began setting Sherman Traps. Purpose of this trip is to get all 4 heteromyid species for seed caching experimentation.

We set out 300 traps as follows:



1800 finished setting traps, ate dinner. Had a very relaxing evening. Light breezes all afternoon; few high clouds, ca. 70°F. No moon. Calm, quiet evening. Heard no *Onychomys* vocalizations.

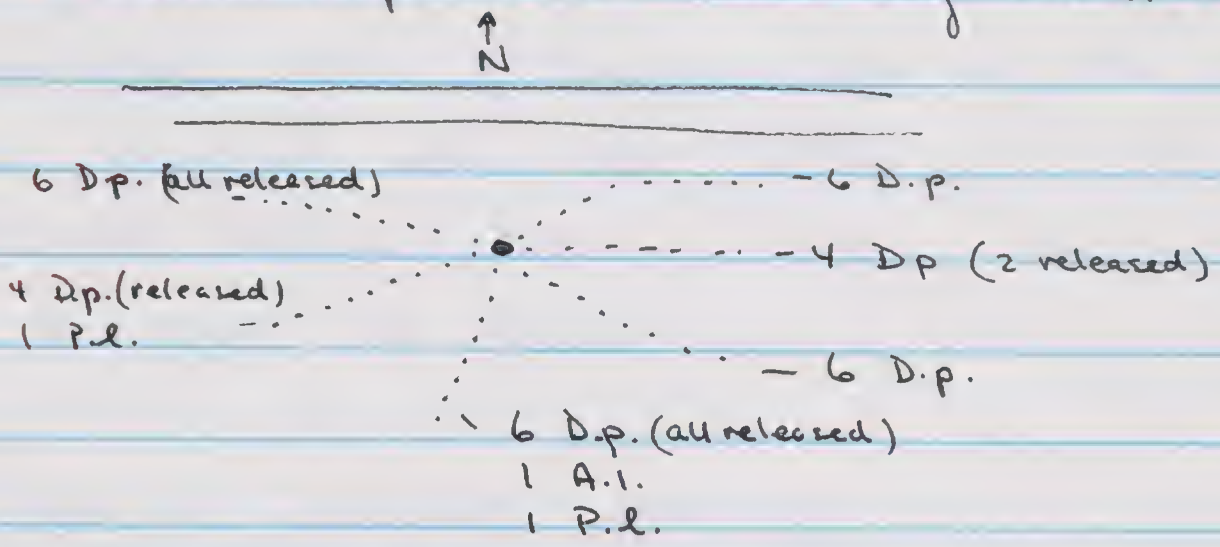
Journal

Hafner, M.S.
1977

2 mi. E Searles Station, 9 mi. NNE Johannesburg, San Bernardino Co., 3200 ft., California.

8 October 0630 awoke before sunrise. Calm morning, few high clouds; cool - ca. 60°F.

Checked traps with following results:



Total: 32 *Dipodomys panamintinus* (kept 14)
2 *Perognathus longimembris* (kept)
1 *Ammospermophilus leucurus* (released)
35

Success = 35/300 ≐ 12%

0730 ate breakfast, rather disappointed with the low diversity. 0830 slight breeze picked-up. (from west). Scattered high clouds.

Spent the warm day walking around. We searched for the gopher population that had existed for several years in the hills to the S; none were there.

1500 decided to change our locality for trapping, so drove to Trona Road then turned S. Went in to Randsburg for supplies.

Journal

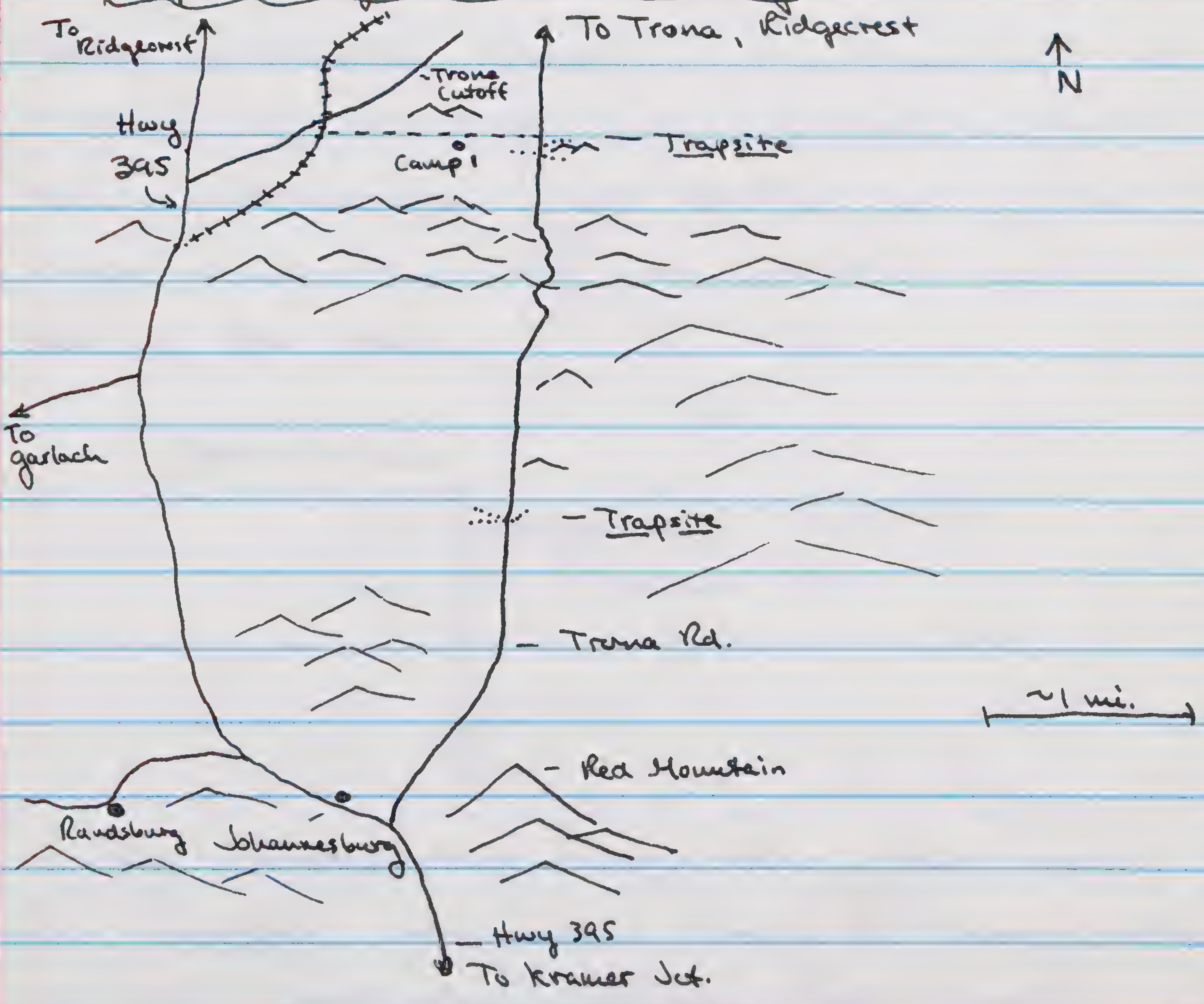
Hafner, M.S.

1977

2 mi. E Searles Station, 9 mi. NNE Johannesburg,
San Bernardino Co., 3200 ft., California.

8 October (con't) 1600 drove N again on Trona Road to a point mi. (by road) N of the junction of Trona Rd. with Hwy 395. We decided to try for D. merriami and P. longimembris in the dry wash habitat near the bottom of the shallow valley. Mostly Larrea and Atriplex. We set out 150 traps in 3 lines as below:

Map of General Locality:



Journal

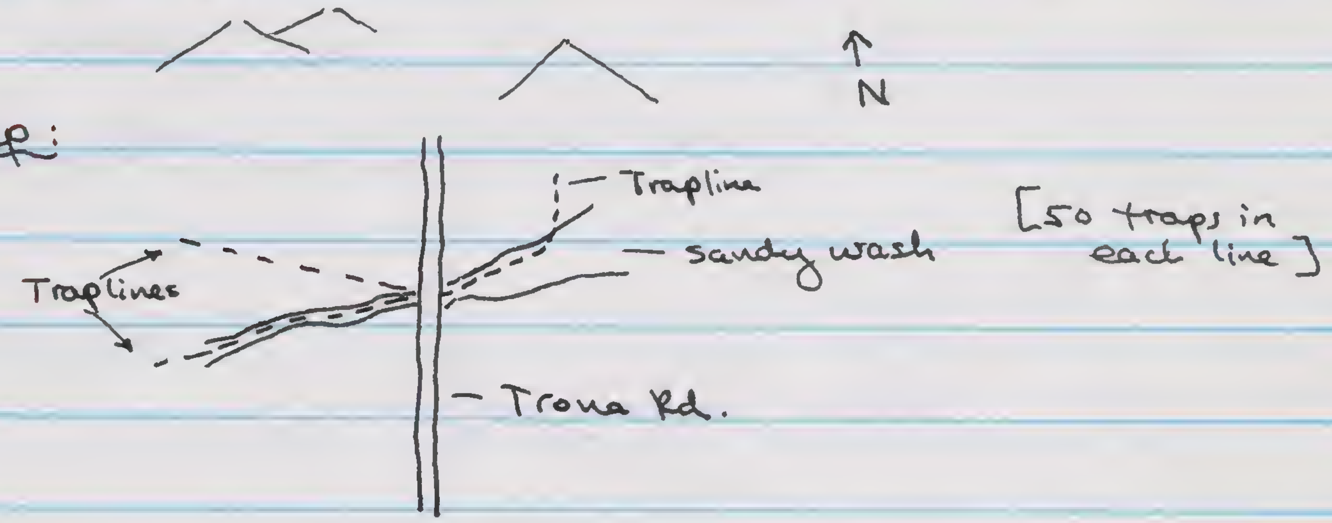
Hafner, M.S.
1977

2 mi. E Searles Station, 9 mi. NNE Johannesburg, San Bernardino Co., 3200 ft., California.

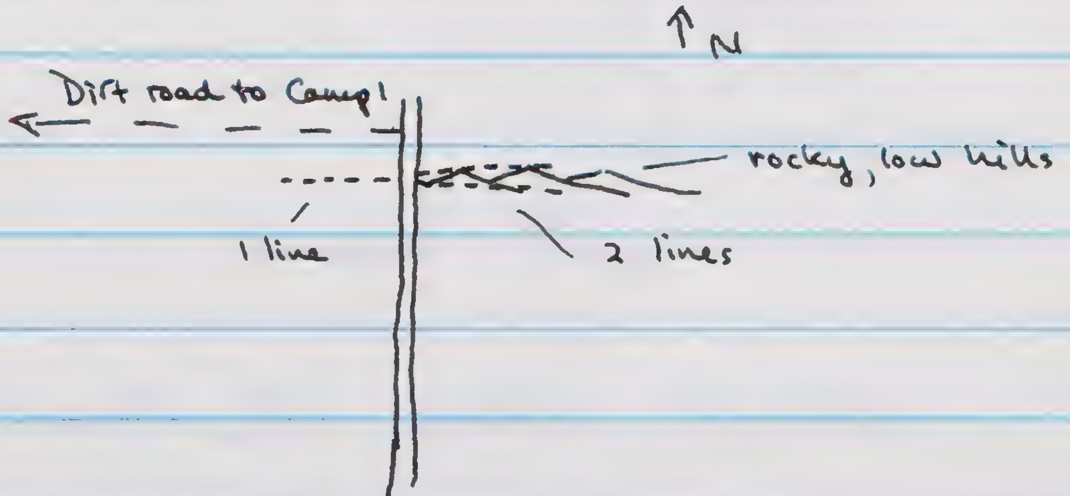
8 October (con't)

Trap locality:

Map:



Drove further north on Trona Rd. into the valley containing Camp 1. We then set out 3 lines of 50 traps each, 2 lines in the rocky outcroppings just to the east of the road and the 3rd line on the opposite side of the road.



The habitat was very rocky, few *Larrea*, few *Atriplex*. We drove back to camp where we had bar-b-que chicken for dinner. Beautiful sunset, balmy, light breeze from the SW. Clear, few clouds. Ca. 70° at sunset.

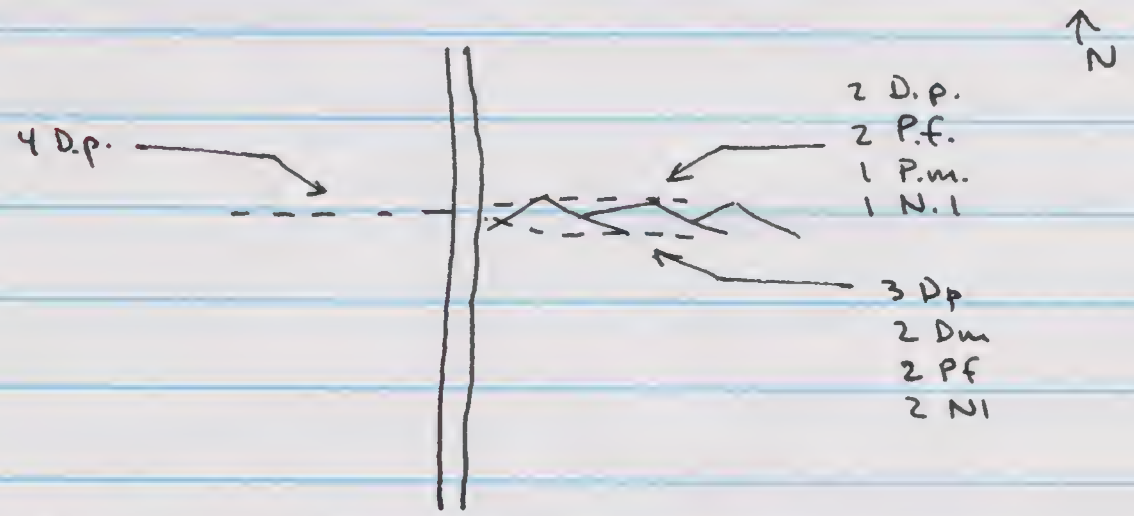
Journal

Hafner, M.S.
1977

2 mi. E Searles Station, 9 mi. NNE Johannesburg, San Bernardino Co., 3200 ft., California.

9 October — 0715 awoke. The evening and most of the night had been moderately windy. The morning was breezy, cool.

We drove to check traps:



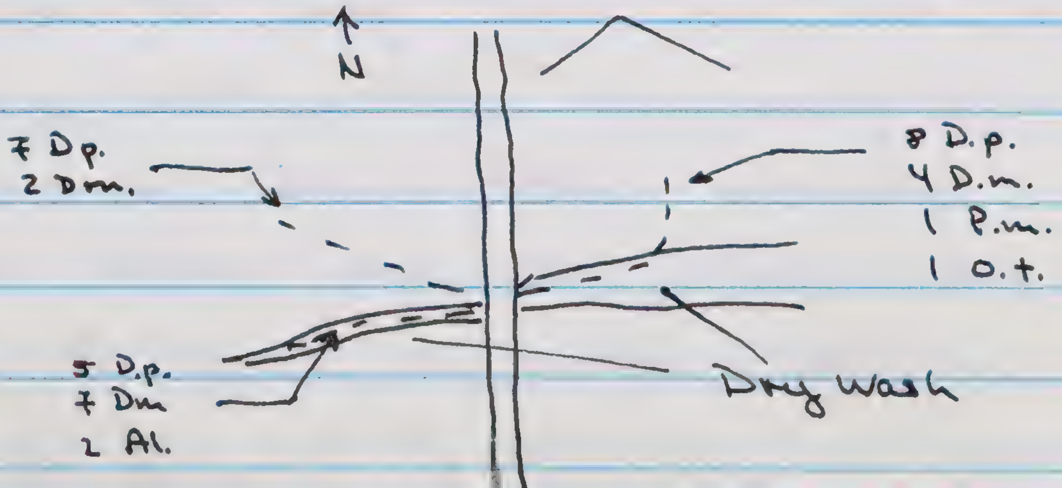
Locality: (above) 7.9 mi. N, 2.8 mi. E Johannesburg, 3200', San Bernardino Co., California.

Results: (as above)

9	D. panamintinus
2	D. merriami
4	P. formosus
3	N. lepida
1	P. maniculatus

success: 19/150

Drove to the southern locality:



Journal

Hafner, M.S.
1977

2 mi. E Searles Station, 9 mi. NNE Johannesburg, San Bernardino Co., 3200 ft., California.

9 October (con't)

Trapping Results (con't):

Locality: (map of results on previous page)
4.5 mi. N, 2.7 mi. E Johannesburg, 3300 ft., San Bernardino Co., California.

Results: (totals)

20	D. panamintinus
13	D. merriami
2	A. leucurus
1	P. maniculatus
1	O. torridus

success: 37/150

We released all animals except:

8	D. merriami
4	P. formosus
1	O. torridus

1000 Photographed some kangaroo rats then returned to camp. Spent day relaxing and taking short walks. Very warm (90-95° F) Occasional breeze (from W-SW).

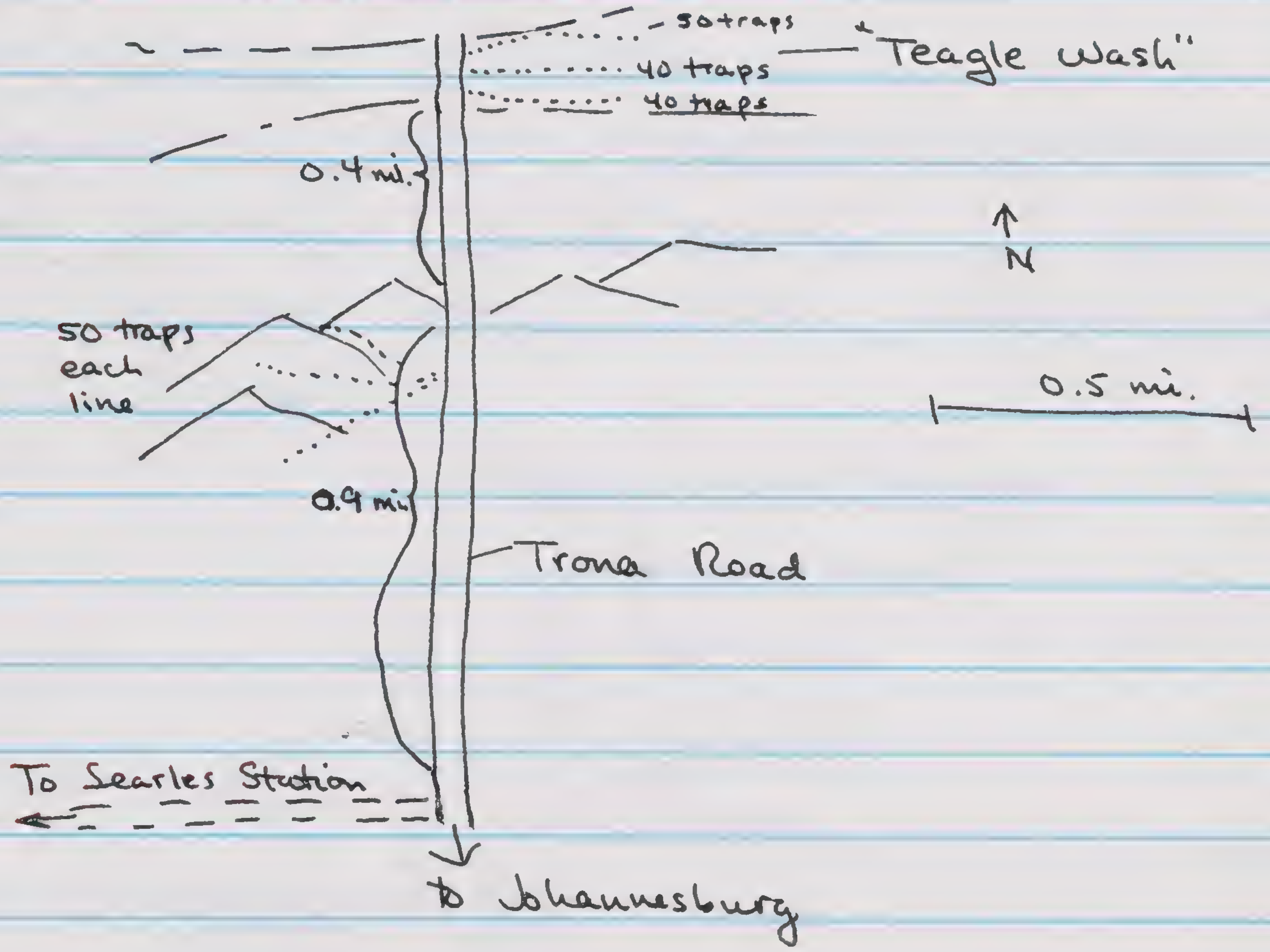
1500 drove back into Johannesburg to call home to check on Julia. All's fine. Returned to vicinity of Camp 1 to set traps. Drove

Journal

Hafner, M.S.
1977

2 mi. E Searles Station, 9 mi. NNE Johannesburg, San Bernardino Co., 3200 ft., California.

9 October (con't) north on Trona Rd. past the turn-off to Searles Station (and Camp 1). Set traps at the 2 localities below.



Finished setting traps ca. 1730 and returned to Camp. Very warm afternoon; light breeze. We relaxed all evening. Clear, cool night. Windy.

2 mi. E Searles Station, 9 mi. NNE Johannesburg, San Bernardino Co., 3200 ft., California.

10 October 0615 awoke about ½ hour prior to sunrise. Broke camp and drove to check traps. (Results on following page).

Journal

Hafner, M.S.
1977

2 mi. E Searles Station, 9 mi. NNE Johannesburg, San Bernardino Co., California. 3200 ft.

10 October (con't)

Trapping Results:

Locality:
8.8 mi. N, 2.7 mi. E Johannesburg, 3000 ft., San Bernardino Co., California.

Habitat: rocky hillside, scattered *Larrea* and *Atriplex*.

10	*Perognathus formosus*
2	*D. panamintinus*
1	*D. merriami*
1	*A. leucurus*
1	*N. lepida.*

success: 15/150

Locality:
9.4 mi. N, 9.0 mi. E Johannesburg, 2900 ft., San Bernardino Co., California.

Habitat: Dry wash; coarse sand; mostly *Atriplex* with scattered *Larrea*.

1	*D. panamintinus*
1	*A. leucurus*
1	*N. lepida*
1	*P. formosus*

Success: 4/~~#~~130

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2 mi. E Searles Station, 9 mi. NNE Johannesburg, San Bernardino Co., 3200 ft., California.

10 October (con't)

We had hoped to catch more P. longimembris in the dry wash, but were suprised to catch only the 1 P. formosus.

0800 we pulled all traps and drove via Johannesburg and Randsburg to Mojave. We had a very pleasant breakfast in Mojave then 1000 departed for home. Pleasant, warm trip up the Central Valley. 1630 arrived Richmond.

Hafner, M. S.

Journal

1978

Calif.

Mexico

Nevada

Utah

Costa Rica

New Mexico

Journal

Hafner, M.S.
1978

San Pablo, Contra Costa Co., California

20 March 1430 Departed home with John and Patti Hafner bound for L.A. Airport. We'll catch a plane there tonight for Mexico City. After uneventful trip down the Valley we arrive at L.A. Airport.

2400 Depart LA Airport via Mexicana Airlines. 0520 Mexican time arrive in Mexico City.

Mexico City, Mexico D.F., Mexico.

21 March 0520 Arrive. Pick-up rented vehicle (VW bus) and head for City "Centro". After getting lost for a short while, we found the Liquid N_2 place. Unfortunately, however, this is a holiday (~~Jua~~ Juarez's birthday), so the cashier's place wasn't open — the guy at the large liquid N_2 tank gave us half of a tankful 7-8 liters for a small sum. (He almost lost his job!). 0830 we depart Mexico City head via Hwy 15 for Toluca.

1000 eat in Toluca and buy some groceries. 1030 Depart via Hwy 15 for Morelia, Michoacán. Weather is beautiful.. few scattered clouds, light breeze ~~for~~ from the west — 70°F. We stopped about 40 miles west of Toluca and napped from

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Hafner, M.S.
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En Route Mexico City to Morelia, Michoacán, Mx.

21 March 1200-1300. After lengthy drive ~~arrive~~ we arrive in Morelia 1630. Ate dinner in the town square (no beer, as this is a holiday), then walked around for awhile looking at local crafts. I bought Emily and Julie each a nice blouse in a local shop. For a small bribe, I managed to buy some cold beer. We departed Morelia via Hwy 15 west at 1800. Camped about 500 meters off the Hwy on the turnoff to Capula (about 12 km. on Hwy 15 SW of Morelia). Very rocky, thornscrub habitat — we set out 50 sherman traps here.

2000 went to bed — cool evening, light breeze from SW.; light overcast — full moon.

12 km. SW Morelia, Michoacán, México.

22 March 0630 arose. cool, breezey morning.

Checked traps:

2 *Peromyscus* sp.
2 *Baiomys* sp.

(released the animals)

0700 continued west on Hwy 15 and drove via Quiroga and Zacapu to Zamora. Picked-up some fresh water west of Zacapu.

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Hafner, M.S.
1978

En Route Morelia to Apo, Michoacán, México.

22 March (con't) In Zamora we re-fueled and bought some ~~sliced~~ sliced meat. Continued SW on road to Los Reyes. Arrived in Apo 1230. Set traps for gophers (*Zygogeomys*) in the same field that we trapped last August (or late July?). The field was "laid to rest" — a local told me that the field was planted in corn ~~even~~ every 2 years then rested for 2 years. The *Zygogeomys* were very active. — their mounds were typically "volcano-shaped" (very ~~steep~~ steep-sided). The earth was very fine and quite moist about 1 cm below the mound's surface. By 1330 I had 9 sets out. We waited much of the afternoon.

1700 I captured one young ♂ *Zygogeomys* near the E edge of the large field. We kept the animal alive while we walked into the town of Apo — where we had a few beers and bought 2 nice vases (large, round - 20 pesos each = 90¢ U.S.). We walked back to the trap site and rechecked traps - no captures. We slept at about 2100 - cool evening — full moon with a light haze. We hope for better luck tomorrow.

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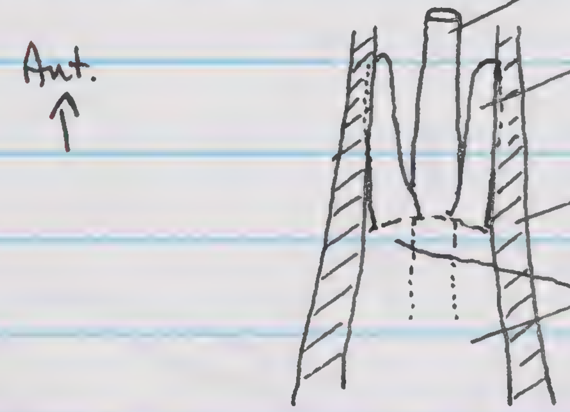
23 March 0630 awoke and checked traps. No captures. Spent most of the day sitting and waiting for success. We slept in the early P.M. in a nice shady spot. I captured one ♂ Zygogeomys ca. 1400.

JCH 1368 (see below)

Ventral View



I returned to camp and prepared this specimen as an alcoholic. Again, a young ♂. (Counting the 3 specimens John and I captured here last summer, we have captured a total of 5 Zygo's, all have been immature ♂♂ - based on the state of the reproductive tract.) 1630 JCH captured a large ♂ Zygogeomys. We returned to camp and prepared the specimen. Finally, we have an adult ♂ (sperm, reprod. tract, phallus, etc!). (We are now 6-for-6 males). When preparing the reproductive tract, I noted that the vesicular glands were

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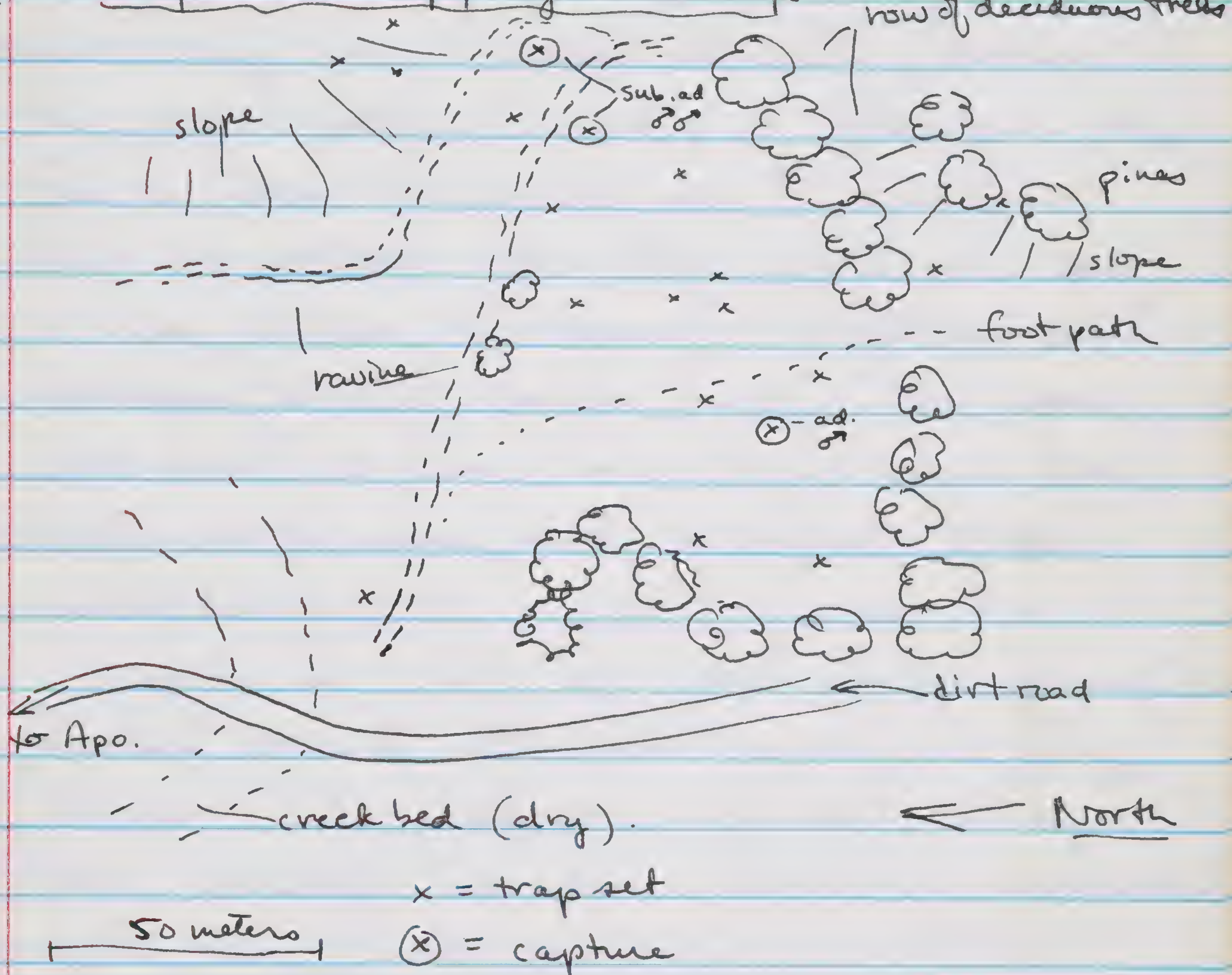
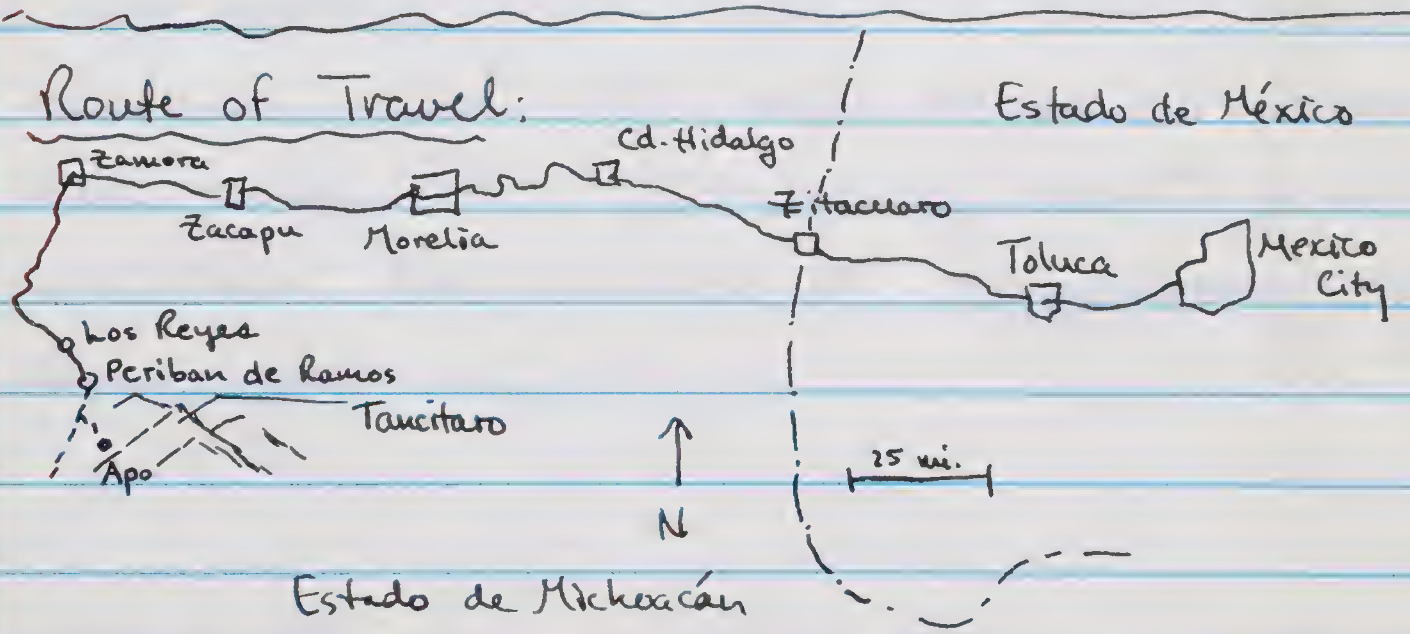
23 March (cont)

Map of trapping locality:



Route of Travel:



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23 March (con't) long and slender (not typically Geomyid) and they were tucked beneath (dorsal to) the pubic bones (see fig. on previous page). This is somewhat unusual as I remember. 1730 We walked into Apo where we had a nice dinner of Huevos, Frejoles, and tortillas (and, of course, beer). The dinner cost about 14 pesos each (= 60¢ U.S.). We returned to camp and rechecked traps — no captures.

While in town, we saw some youngsters running around with masks on carrying sticks and clubs — apparently they were involved in some festivities associated with the Easter holidays.

We retired 2100, again a cool, breezy evening. We will pull traps tomorrow and head for Orthogeomys country. We now have the adult ♂♂ Zygogeomys we were after.

24 March 0630 awoke and checked traps — no captures. I photographed some Zygogeomys mounds and we measured the height and width of 20 mounds, plus the diameter

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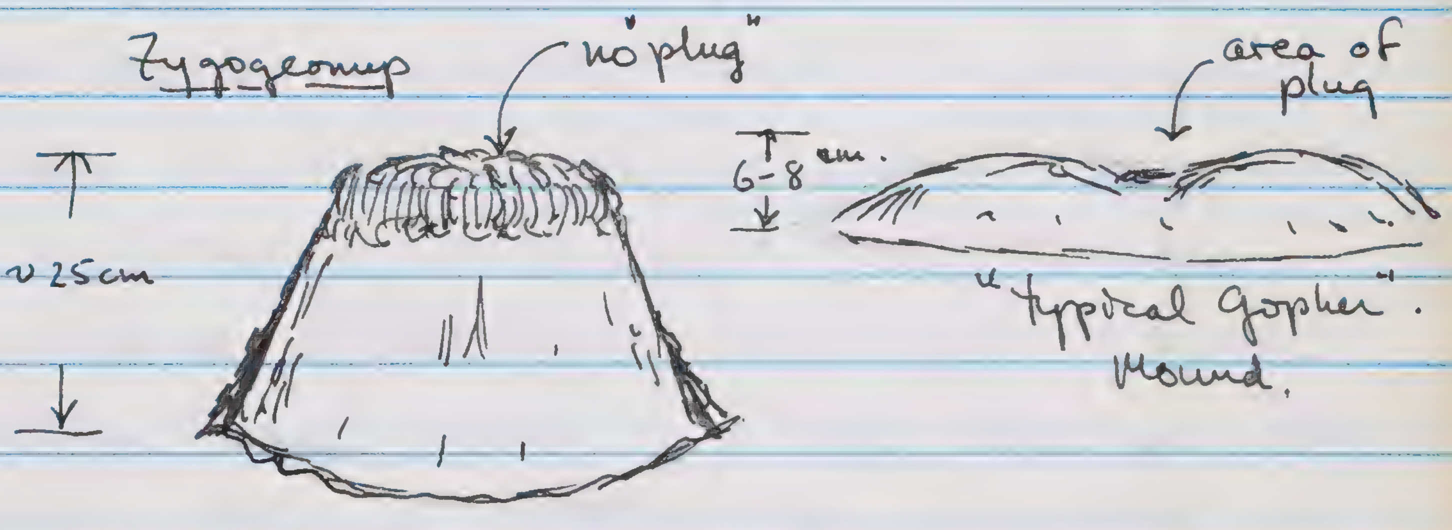
24 March (con't) of the burrow entrance at ground level. We think that *Zygogeomys* mounds are quite distinctive in terms of mounds of the other genera we have observed. It appears that *Zygo's* rarely - if ever use the mound as a central locus for surface foraging — the mounds appear to be simply dirt pushed up from beneath, much as lava from a volcano — thus, the mounds are rather volcano shaped.



0830 packed up and headed through Apo back to the main road. Turned south and drove over a rather poor road to Buenavista Tomatlán. We dropped in elevation along the way from about 4000 ft. to maybe 2,500 feet. The habitat changed from mixed evergreen, conifer, oaks to desert scrub — candelabra cacti and mesquite trees. We noted many

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En Route Apo to Arteaga, Michoacán, México.

24 March (con't) small squirrels scampeing along the way — about 250 mm total length with pale red pelage.

We bought some fruit and soft drinks in Buenavista Tomatlán then headed SE on Hwy 120 to ~~Cuatro~~ Caminos (= Nueva Italia de Ruiz on some maps). We then headed south on Hwy 37 and drove for several hours through the desert heat to the town of Arteaga, about 66 kms. from the Pacific Ocean. We noted the first signs of pocket gopher (Orthogeomys) mounds at a point about 12 km. (by road) NE of Arteaga. We set out 5 sets at various spots along the road between Arteaga and 12 km NE of Arteaga. The gopher digging (with the exception of one) appeared old and dried-out. We set the traps anyway, as we could find no better holes.

1700 returned to Arteaga and ate a nice dinner of huevos, frijoles, and tortillas. Walked around town for awhile (John and Patti each bought straw hats) then returned to the trap sites. No captures. We had one

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Vicinity Arteaga, Michoacán, México.

24 March (con't) set-off at the fresh hole ca. 12 km. NE Arteaga. (All of the sets used pedal traps). We re-set the traps and drove through a nearby village and up a narrow dirt road, where we pulled-off and 2100 slept. Warm, calm evening.

Vicinity Arteaga, Michoacán, México.

25 March 0630 arose and drove to check traps. (JCH lost his favorite pocket knife - we looked all around and did not find it.). Again, we had no captures. The same gopher set-off 2 pedal traps without being caught. We pulled all of the traps and headed SW for La Mira and Playa Azul. We figured that the Orthogeomys would be more numerous there. Although the drive was only about 45 miles, it seemed to take about 2 hours to reach La Mira. The habitat all the way was dry thorn-scrub desert. We saw no signs of Orthogeomys anywhere along the route. We turned S from La Mira and drove across the dam that marks the Michoacán - Guerrero border. We then

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En Route, Arteaga to Playa Azul, Mich. México.

25 March (con't) drove several miles into Guerrero without seeing signs of gophers. Much of the land was planted in coconut palms, banannas, and cane but nowhere in these plantations were there gophers. We turned around and returned through La Mira to Playa Azul. This is a vacation spot for much of central Mexico. A very dirty place in a very beautiful setting. Littered with beer cans, paper, and junk. We checked into a motel (300 pesos = 15 $US) about 1500 and showered. After a nap we walked around town and had a few beers. We made arrangements to call home (but later, no lines were available for international calls). We had a nice dinner before going to the beach (just as the sunset) to sit under a thatched umbrella and look at the ocean breakers. 2100 returned to the motel and retired. Very warm night, full moon. Hope I can call home tomorrow.

Playa Azul, Michoacán, México, sea level.

26 March 0645 arose to a bright, warm morning. Today is Easter Sunday. We dressed and

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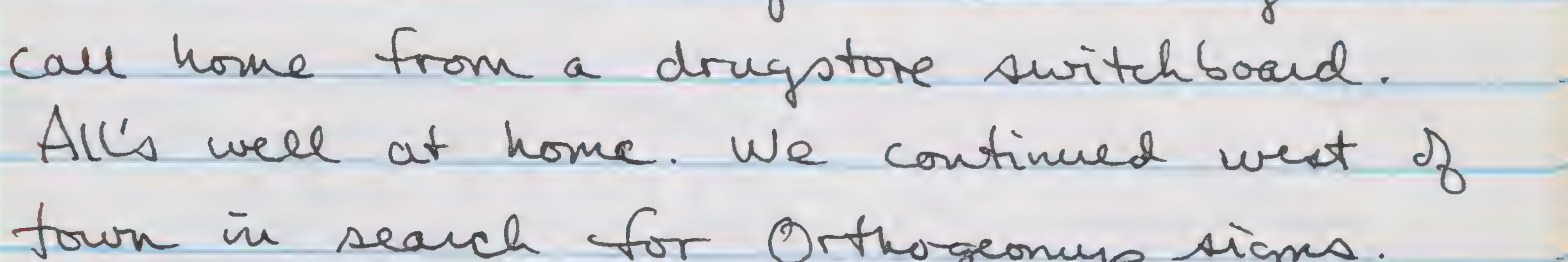
En Route: Playa Azul to Arteaga, Michoacán, México.

26 March headed out of town toward Arteaga. Stopped for some pictures of the beautiful trees in bloom - they have loads of light-pink to purple blossoms (I think they are legumes?). About 9:30 arrived in Arteaga and managed to call home from a drugstore switchboard. All's well at home. We continued west of town in search for Orthogeomys signs. Stopped several times to search-out areas, but found only old holes. We re-set the trap at the site 12 km. (by road) NE of town (where the gopher had previously buried our traps). This time we tried a new trapping technique:



We hoped that the animal would not sense the trap until too late. We put a layer of earth on top of the bananna leaves to keep out all light.

1200 we continued looking for more active gopher signs. We pulled-over at several fields until we finally found a banana plantation (small plantation) with several

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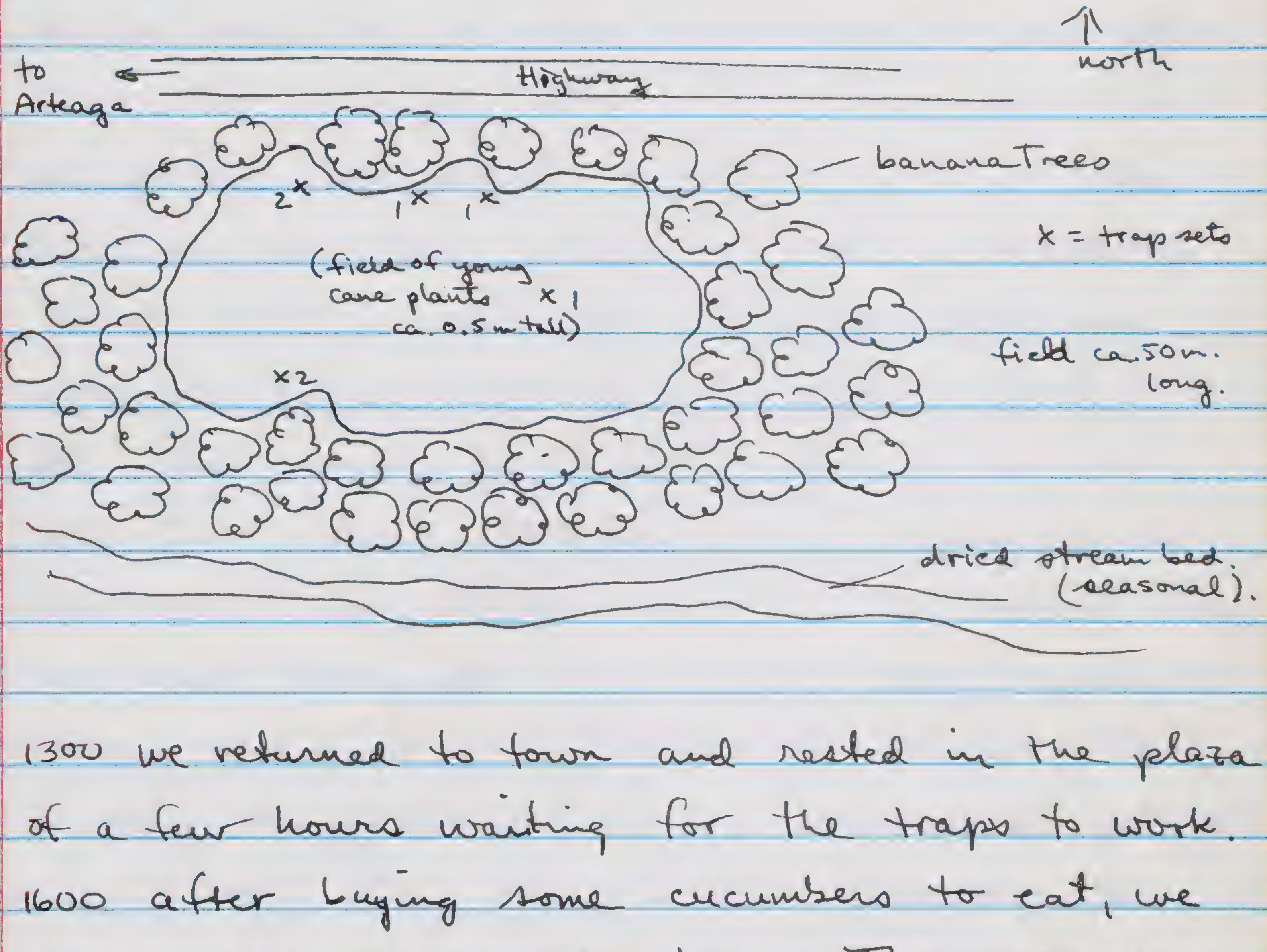
Vicinity Arteaga, Michoacán, México.

26 March con't fresh gopher systems. We set out 5 sets in this field, again using all pedal traps (and used the system diagramed on the previous page).

Map of trapping locality:



1300 we returned to town and rested in the plaza of a few hours waiting for the traps to work. 1600 after buying some cucumbers to eat, we drove back to check the traps. The set at the far locality (12 km. NE Arteaga) was plugged just before the trap — the trap was untouched. We reset this trap and drove to the closer locality... no activity. We drove into Arteaga and had a very nice dinner of Bistek con frejoles, etc. — 25 pesos (=$1.15 us). 1830 drove to recheck traps. No activity at either site.

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Hafner, M.S.
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Vicinity N of Arteaga, Michoacán, México.

26 March (con't) We noted several small bats hawking insects at the far locality (12 km NE Arteaga). We decided to find a place to camp, so we returned to the small village we had camped near 2 nights ago (La Junta). As we passed through the village, we noted that the canyon ahead was on fire — so we ended-up sleeping alongside the main highway at the 12 km E Arteaga locality. About 2100 a VW van full of mexicans stopped right next to us and asked if we had some oil — we replied no, but told them that Arteaga was only 12 km. further. They stuck-around for about half an hour playing their radio very loudly — (they knew we were trying to sleep). They finally flagged-down a truck and got a can of oil. They then left — leaving the oil can and other trash behind. I slept rather poorly — warm evening, cooling off in the early morning hours.

Vicinity N of Arteaga, Michoacán, México.

27 March 0600 arose and checked the single set nearby, no activity. We then drove to the locality

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3.6 km. (by road) N Arteaga, Michoacán, México.

27 March (con't) nearer to Arteaga (above locality). In the last set checked, we caught a ♀ Orthogeomys. The animal was large, but not as large as we had expected. She was nearly unfurred, with an "opposum-like" pelage.

We kept this specimen alive and returned to town where Patti called her mother to check on Jim — all's ok. I must call the airport later to confirm our reservations. 1000 we returned to the above locality and rechecked traps — 1 Orthogeomys (grandis?) This was a ♂ and somewhat larger in size and more sparsely furred. The ears were also large for gophers — the entire head gave the appearance of a small hippopotomus! We reset the extra traps and returned to Arteaga where we bought cucumbers for the gophers (and ourselves) and wrote-up field notes.
1230 I called México City to confirm our reservations for the flight home. 1245 we departed Arteaga and pulled the traps at both localities. At the locality 3.6 km N Arteaga we measured some Orthogeomys mounds (as we had done for the Zygogeomys). We then departed this region and drove

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En Route: Arteaga to Pátzcuaro, Michoacán, México.

27 March (con't) NE via Hwy. 37 back to "cuatro caminos" (south of Nuevo Italia). It was an extremely hot day — the live Orthogeomys fared fine, however. We continued N from Nuevo Italia and climbed back onto the SW Edge of the Méxican Plateau. The elevation (now 6,000-7,000 ft) made for much cooler climate. 1730 we drove via ~~Pátzcuaro~~ Uruapan to Pátzcuaro. Along the way we noted an extreme abundance of gopher activity; Our best guess were Pappogeomys and, possibly, Thomomys. We passed through Pátzcuaro at 1730 noting the beautiful and comparatively clean town. We continued south from Pátzcuaro and drove over the pass to Tacámbaro. According to Hall and Villa (1947) and Goldman (1938?) Zygogeomys is supposedly in the vicinity of this pass between Pátzcuaro and Tacámbaro. We decided to trap tonight S. of Tacámbaro for Liomys pictus and spend tomorrow morning searching for Zygogeomys. We reached Tacámbaro just after dark and spent around ½ hour just getting through town. We finally found the road towards Pedernales (to the S of Tacámbaro) and we winded down the steep road for

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6 km. (by road) S Tacámbaro, Michoacán, México.

27 March (cont) a distance of 6 km. before pulling over and setting 100 sherman traps ~~in~~ along a fairly steep hillside facing to the SW. The vegetation was natural for the most part with occasional cane plants. There were occasional rocky-outcroppings amidst thorn-scrub vegetation. The brush became more dense toward the lower parts of the hillside. The level land at the top was plowed and unplanted - it was usually planted in cane.

2130 we finished setting traps and drove back into Tacámbaro for dinner; Had a very nice meal of bistek con papas after which we headed back to camp near our trap site. 2230 retired very tired after a long day's drive.

6 km (by road) S Tacámbaro, Michoacán, México.

28 March 0630 awoke and walked to check traps:

Results: 2 *Liomys pictus*
1 *Baiomys sp.*
1 *Peromyscus sp.*

Success: 4/100 = 4%

We released all but the *Liomys*, which

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6 km. (by road) S Tacámbaro, Michoacán, México.

28 March (con't) we plan to karyotype later today. We broke camp and drove back into Tacámbaro, where we photographed the neat, traditional spanish architecture surrounding the town square. We then drove north from Tacámbaro toward Pátzcuaro. We stopped at the meadow at the highest part of the mountain pass between these two cities and searched for signs of Zygogeomys (i.e., their characteristic mounds). We set some traps in a large meadow, but we were fairly certain that the gophers were Pappogeomys, so we pulled the traps about 9:30, ½ hour after we had set them. (I had one set-off). We continued a bit further N on this road and turned-off to the NW towards Cerro Burro, a steep ~~volcanic~~ volcanic cone rising about 1500 ft. above the surrounding meadows. The road lead to a Microwave transmission station about 2/3 of the way up Cerro Burrow — we saw no gopher signs on the Cerro. 1100 we returned to Pátzcuaro. It is our feeling now that either 1) Goldman was wrong and Zygogeomys does not inhabit the mountain slopes to the SE of Pátzcuaro or 2) the Zygogeomys population

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Pátzcuaro, Michoacán, México.

28 March is small and relictual and confined to some obscure peak in the area of the pass between Pátzcuaro and Tacámbaro. Either way, we decided to hold-off on Zygogeomys for now and hole-up in a motel to Kayotype the 2 Orthogeomys and 2 Liomys specimens. 1130 we bought bread and had sardine ~~sad~~ sandwiches for lunch after checking into the San Felipe motel on the main road just north of town (240 pesos = $12.50 US). (We got room 14, just as last summer). 1400 after showering we Kayotyped the 4 specimens. 1700 went into town and had a very nice dinner (Pescado blanco!). 2200 retired.

Pátzcuaro, Michoacán, México

29 March 0700 awoke and drove into town for breakfast. Had a very nice meal. We met an American named Howard Twining who graduated from U.C.B. Museum of Vertebrate Zoology in ca. 1939 after receiving a Master's degree under Joseph Grinnell!!! He now lives in Ukiah, California on a cattle ranch (with some grapes) and spends much of his time

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Pátzcuaro, Michoacán, México

29 March (cont) helping the Mexican Government as a farm advisor — especially control of "Tusas" = gophers!. We talked at length of his work and the people he remembered from his days at M.V.Z. He especially remembered Carl Koford — whom he has worked with fairly recently. We told him which genera of gophers were in the area (he thought they were Geomys!), and told him of our special interest in Zygogeomys. He said that he would be visiting the Museum soon and would prepare a flat-skin of a Zygogeomys should he catch one in the area. (I haven't much hope, as he poisons the animals and rarely sees what type he is poisoning).

1100 we drove out to the locality S of Pátzcuaro where John and I had trapped gophers (Pappogeomys and Thomomys) last summer. We measured mound height, diameter and diameter of the hole for both genera.

1230 returned to the motel, showered and checked out. Stopped at the souvineer shop next door to the motel (Vicki and Rafael's) and bought some souvineers.

1300 after getting fuel, we drove via Morelia

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Hafner, M.S.
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En Route: Pátzcuaro, Mich., to Vicinity Toluca, D.F., Méx.

29 March (con't) and Zitacuaro to Toluca (Distrito Federál). We found a small restaurant and had a fairly nice meal. Drove out of town toward Volcan Tolucan and parked in a grove of pine trees (ca. 18 km. S Toluca). 2200 went to bed — very cool evening. Clear.

En Route: Toluca to México City, D.F., México.

30 March 0700 awoke, (after a very cold night) and repacked our supplies for the trip home. 0900 drove into Toluca, had breakfast and drove to Mexico City. 1200-1430 toured the Muséo Nacional de Antropologia, after which we relaxed on the lawn in the nearby park. This has been a successful trip — we got the Zygogeomys male that I needed; the Orthogeomys male (+ tissue, blood etc.) and fresh Liomys pictus tissue and blood. Pleasant weather and no major mishaps — couldn't ask for a better trip.

The flight home was somewhat rough — thundershowers over L.A. We arrived in L.A. around 12:30 AM. Drove north via Hwy 5 — Arrived home 0600. Rain in the bay area — what a change from México!

Journal

Hafner, M.S.
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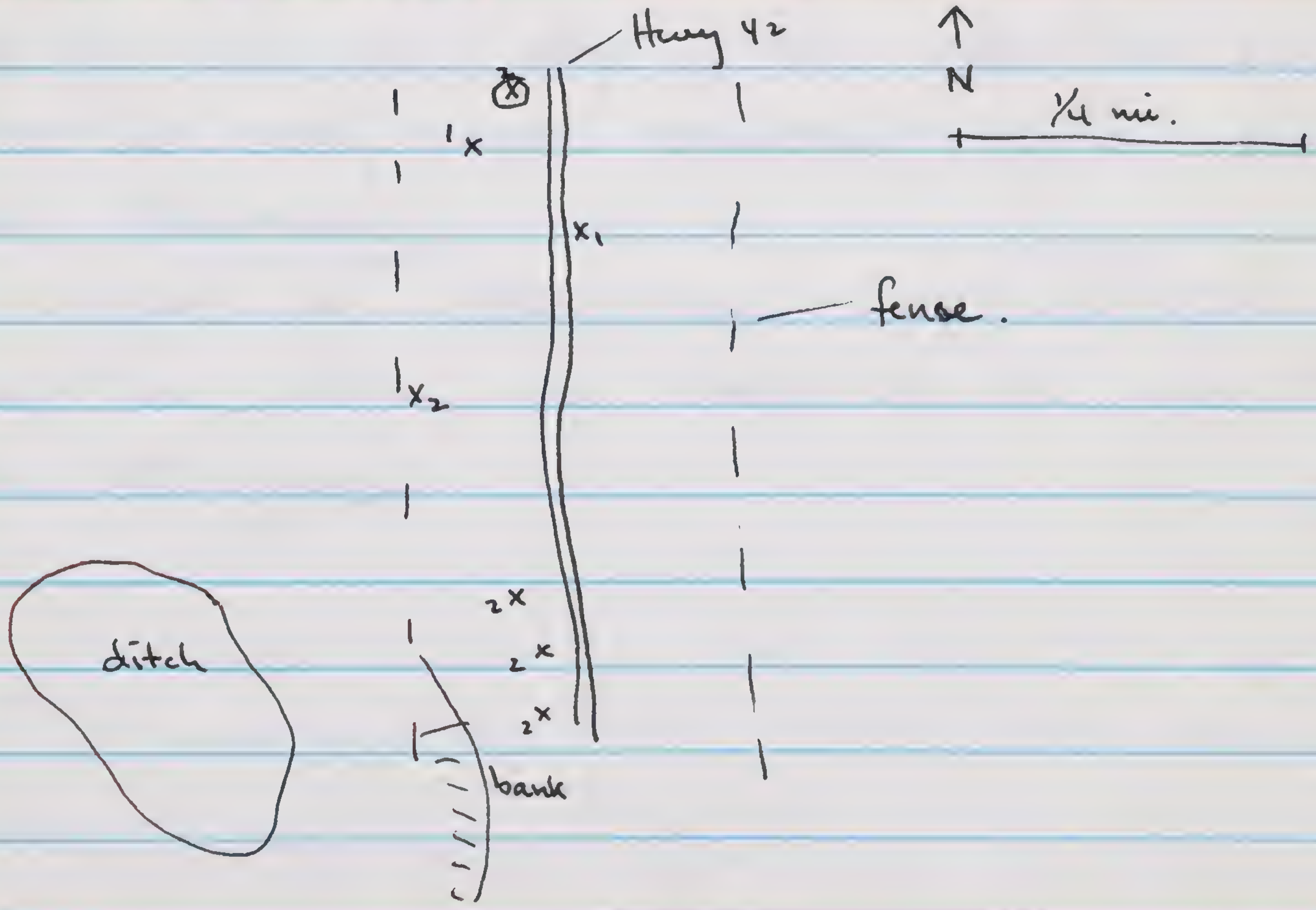
7 mi. S, 4 mi E Willard, Torrance Co., New Mexico.

11 June David Hafner and I departed Albuquerque at 0800 and stopped at the University to pick-up extra Macabee traps. We then drove east on Hwy 40 to Moriarty where we turned south on Hwy 41. We drove through Willard, then turned S on Hwy 42.

Our hopes were to find Geomys bursarius at an old locality near Mesa Jumanes (Cibola Natl. forest). We noted gopher diggings along the road-cut at the above locality and we stopped and set out 7 sets as below.



The holes seemed large - so we suspected that we might have Geomys. We waited

<u>Journal</u>

Hafner, M.S.
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7 mi. S, 4 mi. E Willard, Torrance Co., New Mexico.

11 June [cont] about 1 hour and re-checked traps:

1 *Thomomys bottae actuosus*

We were rather disappointed — this hole was one of the smaller holes — we decided to look for another locality closer to the Mesa (we left the sets out) — we drove south and then west on a dirt road toward the mesa. — We soon found that we couldn't get too close to the mesa so we returned to the ~~[illegible]~~ trap site and took a side road toward the NE end of the mesa. We were able to get near the edge of the mesa this time, but we only noted occasional gopher signs — all *Thomomys*.

1400 we pulled traps — no more captures — and we drove via Hwy's 60, 6 and 25 to Albuquerque.

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Hafner, M.S.
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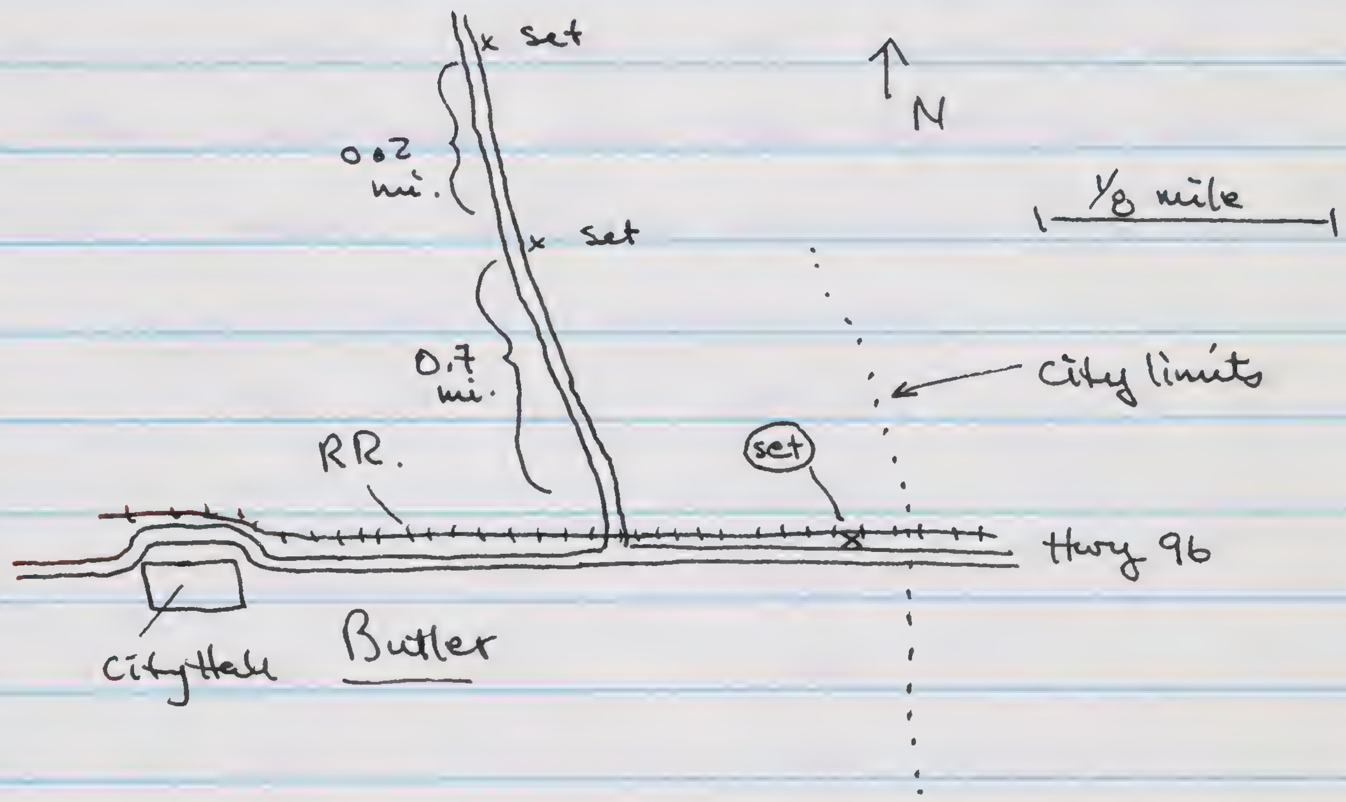
En Route: Athens, Georgia to Butler, Georgia

17 June 0930 John Hafner and I rented a vehicle in Athens (following The ASM meetings) and departed Athens 1030. We drove south on Hwy 129 in search of *Geomys pinetus*. Pocket gophers are not known to occur north of (approx.) Macon in Central Georgia. We drove through Madison to Macon, noting the many beautiful mansions along the way. We continued S from Macon on I-75, then SW on Hwy 49 to Ft. Valley. We turned W on Hwy 96 and arrived in Butler 1400. Butler is a known locality for *G. pinetus* (Merriam 1895!). As we entered town we immediately noted fresh diggings. We noted that the ~~be~~ soil had changed from red, rocky earth to white, sandy earth as we drove south from Macon. These gophers were digging in this sandy soil. We set-out 1 set at this site about 25 meters west of the eastern city limits of Butler (adjacent to railroad tracks.). We then searched for other gophers but only found old holes. JCH was questioned by the local sherriff who suggested that we trap at a place west of town — we took his advice, but found no gophers west of town (save

17 June (con't) some old diggings.) We returned to town and drove north from the main intersection on the eastern outskirts of town where



we found a few more active gophers. We found these gophers particularly hard to trap as their tunnels were buried for a considerable length. We set 2 more sets NE of town (see map) then returned for a quick hamburger. 1500 we checked traps.

1 *Geomys pinetus* juv. ♂.

We took blood and tissue then headed for Atlanta 100 miles to the north. We

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Hafner, M.S.
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En Route: Atlanta, Georgia to Albuquerque, New Mexico

17 June (con't) were able to make changes in our flight schedule so that we arrived home in Albuquerque @ about midnight.

While in Butler, Georgia, we took measurements of mound sizes of *Geomys pinetus* burrows. We were unable to open the burrows near the surface so we don't have burrow diameter measurements.

	mound ht.	mound dia.
1)	18 cm.	80 cm.
2)	19	60
3)	17	60
4)	15	62
5)	20	62

En Route: Albuquerque to Santa Rosa, New Mexico.

19 June 0930 departed Albuquerque and drove north on Hwy 25 then east on Hwy 40 to the vicinity of Santa Rosa, Guadalupe Co., New Mexico.

1200 we took a frontage road north of Hwy 40 at the Hwy 84 exit. We continued

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Hafner, M.S.
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4.5 mi. N, 3 mi. E Santa Rosa, Guadalupe Co., New Mexico.

19 June [con't] on this road (which turned into a dirt road after ½ mile) until we reached a point 3.8 mi. north of the freeway. (Hwy 40). (See map).

At this point we stopped and I set out ~~3~~ 4 sets for what I believed to be *Pappogeomys* ~~.~~. The habitat was basically desert grasslands — occasional rocky outcroppings — *Yucca*, *Cholla*, etc. The soil was quite friable. Within 1 hour I had 3 gophers; The fourth set was buried. I believe these animals are *Pappogeomys castanops* although they are quite small — (all 3 are juveniles) I can see a very faint second sulcus in the incisors, so I'm not sure ——.

We got directions from a rancher as to how we could get closer to the Rio Pecos to search for *Geomys*. Rick Smartt had given us some indication that *Pappogeomys* were more likely to be found away from the river in the sparce grassland and *Geomys* were more likely to be found in the vicinity of the river.

We continued N and W on the dirt road, past the construction site for the new

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Hafner, M.S.
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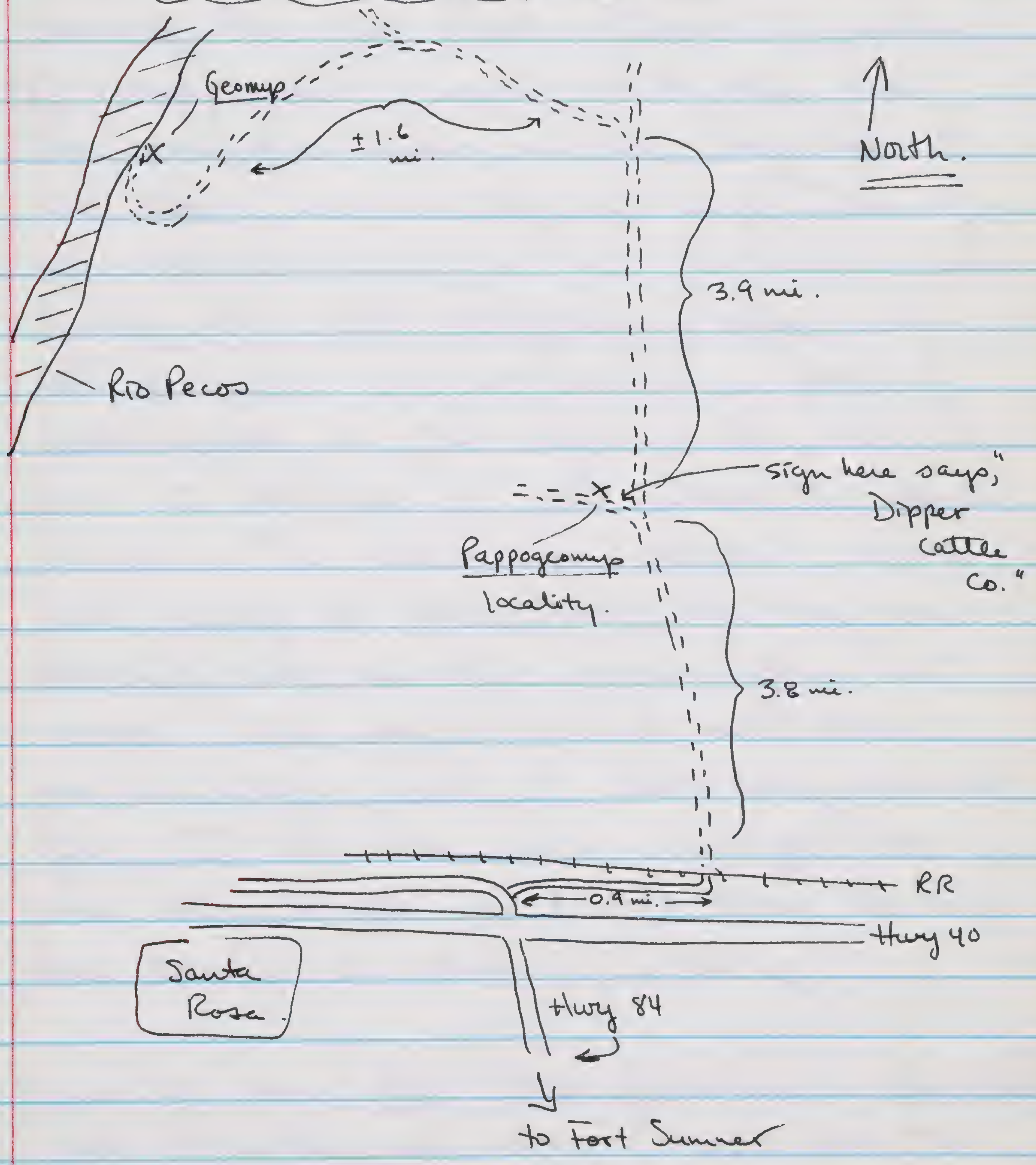
Vicinity NE of Santa Rosa, Guadalupe Co., New Mexico.

19-20 June

Map of trapping locality:



Journal

Hafner, M.S.
1978

7.5 mi. N, 1 mi. E Santa Rosa, Guadalupe Co., New Mexico

19 June (con't) dam on the Rio Pecos. At a point about 7.7 mi. N of Hwy 40 we turned west toward the Rio Pecos. About 1.6 miles of windy road brought us to the river. The road dead-ended at an Archeological site being worked by a large (~12) team of men and women from the National Center for Anthropological Studies in Albuquerque. We stopped in a group of Cottonwoods on the edge of the river, and I set out 7 sets along the sandy banks. The river was shallow, narrow and muddy at this point. The day was extremely hot and the gophers were not active. We waited around until about 1900 at which point I had only 2 set-offs. I left the traps overnight. We drove back to the motel-strip along the Hwy and checked-in. Relaxing evening.

7.5 mi. N, 1 mi. E Santa Rosa, Guadalupe Co., New Mexico

20 June 0615 I awoke and drove (alone) back to the trap site. Several set-offs but only captured 1 animal.

1 *Geomys bursarius* ♀

Journal

Hafner, M.S.
1978

7.5 mi. N, 1 mi. E Santa Rosa, Guadalupe Co., New Mexico

20 June [con't] I'm fairly certain of this identification except that the left incisor had 2 grooves and the right only had 1 (as in Pappo's!). I took blood/tissue and habitat shots and returned to the motel. 1000, after breakfast we headed SW on Hwy 54 then west on 60 to Hwy 25. We then headed south to Deming and west to Tucson, Arizona. (arrived 1800 local time). We spent a relaxing evening in Tucson after a nice swim. Great mexican meal, too!

En Route Tucson, Arizona to San Diego, California

21 June 0900 departed Tucson and drove west to Yuma. Extremely hot day. We called Aunt Gladys and Uncle Ken Grubaugh in San Diego to "warn" them of our arrival this evening. The drive from Yuma, Az. to El Centro, California was extremely uncomfortable, but we managed. Finally, 1700 arrived in San Diego! We stayed until 24 June, at which time we drove north to home.

Journal

Hafner, M.S.
1978

En Route: San Francisco, California, to San Jose, Costa Rica.

5 July John C. Hafner and I departed San Francisco airport at 0730 and after stop-overs in Los Angeles, California and Guatemala City, Guatemala we arrived in San Jose, Costa Rica. (1900 hrs.). We went through immigration and rented a vehicle with little difficulty and managed to exchange $10 at the car rental place – exchange rate = 8.54 colones to the dollar. The sun had set at ± 1830 hrs. so we made it into the city by dark. (The airport is approximately 15 km NW of the city). We went into the Centro area and had dinner. We were quite surprised at the high cost of food here. 2100 drove SW of town to the small town of Escazú (7 km.) but could find no place to pull-off the road and sleep. We returned to San Jose and drove about 2 km. NW of the city where we pulled-off and slept outside. Very cool, comfortable evening. Occasional light rain.

San Jose, Costa Rica. 3870 ft.

6 July 0500 sunrise. 0600 we finally arose and drove into town. We searched and searched for the "Ministerio de Agricultura" but only found it by accident at about 0730. For future reference, the office

Journal

Hafner, M.S.
1978

San Jose, 3870 ft., Costa Rica

16 July (con't) for obtaining collecting permits is entitled:

Ministerio de Agricultura y Ganaderia
Direccion General de Recursos Pesqueros
y Vida Silvestre

located at: Calle 1 y Avenida 1

We were treated very nicely at the permit office and told to return at 1100 for our permit. We would then be required to return after collecting to obtain an export permit for the specimens.

We next went to a "Supermercado" where we bought supplies – again, the expenses were much higher than we expected. While I exchanged money, John went to the U.S. Embassy (nearby) and got directions to the place where we could get liquid nitrogen.

The address for liquid nitrogen is:

Bodega Gases Industriales
Calle 6 y Avenida 16.
San Jose, Costa Rica.

We had no problem getting the N_2 (cost was 6 colones (=$.50) per liter). We returned to the Centro area where we bought some small gifts (silver spoon for mom and 2 coffee bean necklaces for Patti and Darcey). 1100 we went

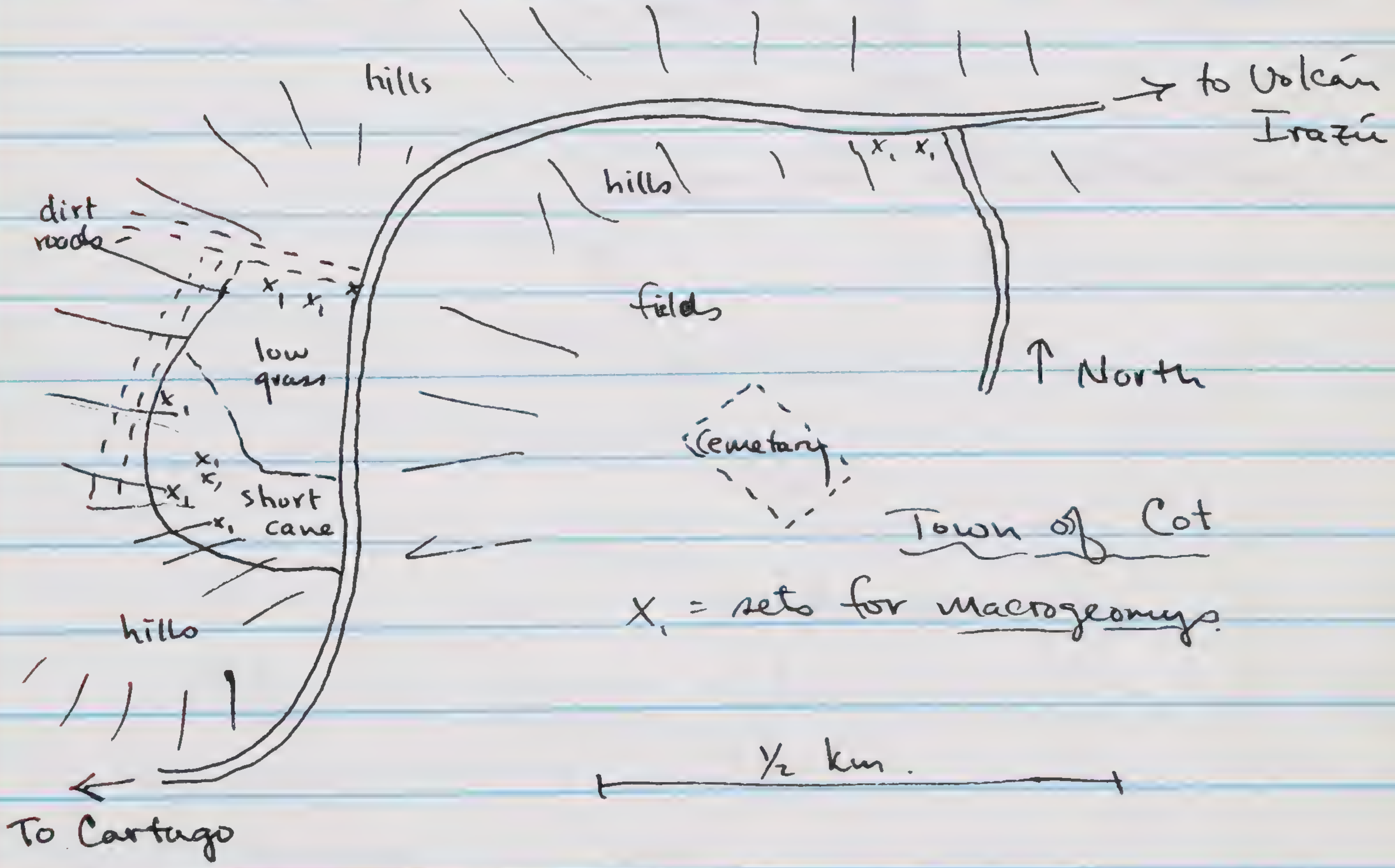
Journal

Hafner, M.S.
1978

San Jose, 3870 ft., Costa Rica.

6 July (con't) again to the permit office and picked-up our permit to collect Macrogeomys and Heteromys. 1115 we got fuel for the car — again, very expensive — and headed out of town on the main highway toward Cartago. We drove through Cartago then headed NE on the road toward Volcán Irazú. We drove approximately 10 km. from Cartago through areas of farming and cattle grazing to a point 7 km. N and 3 km. E Cartago

Prov. Cartago, Costa Rica.



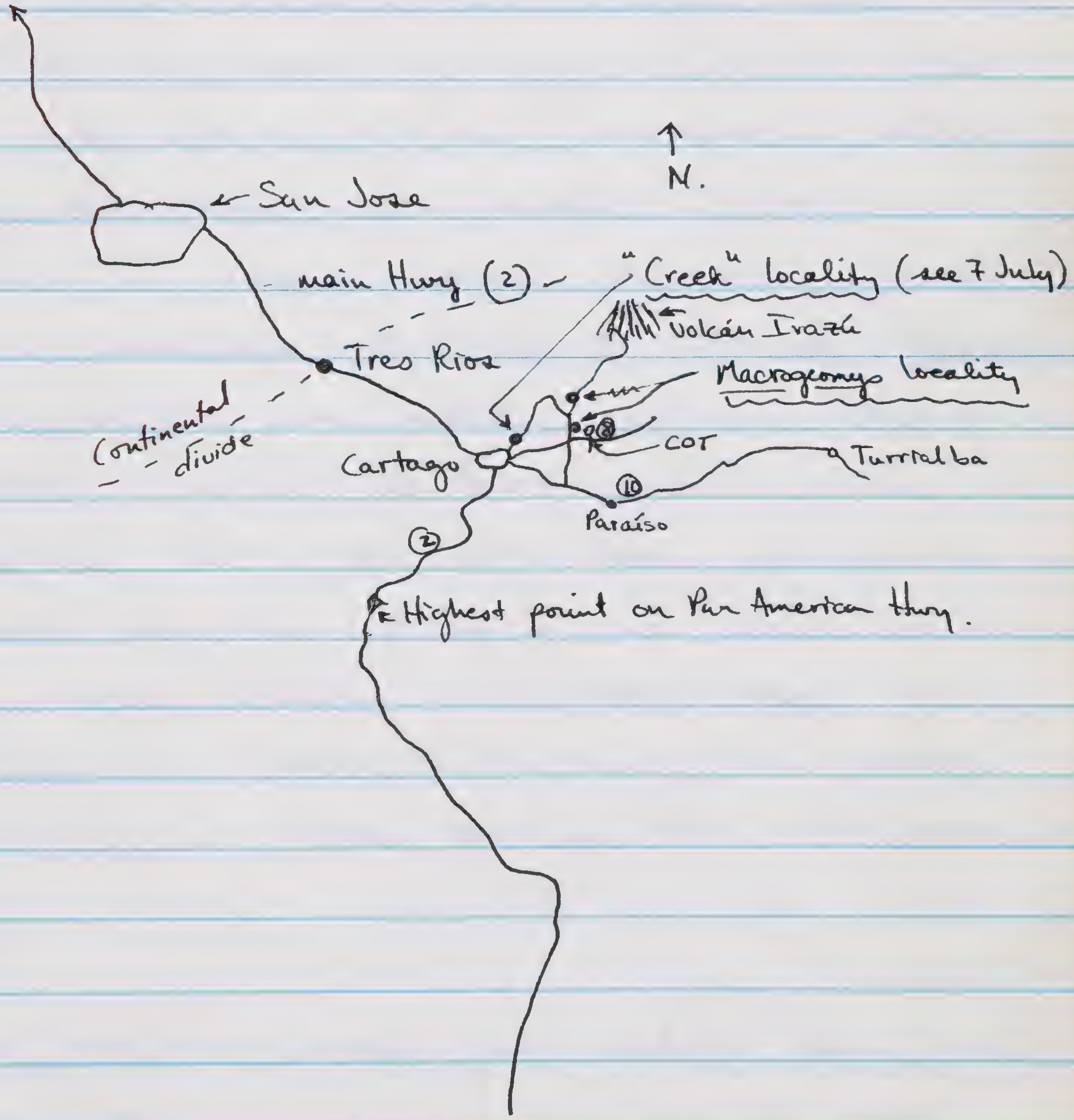
We set out 7 sets for Macrogeomys (each a single steel (or pedal) traps trap). We then drove about 800 meters further up the road and set 2 more sets. All Macrogeomys activity seemed to be located

Journal

Hafner, M.S.
1978

7 km. N, 3 km. E Cartago, Prov. Cartago, Costa Rica.

6-7 July. Map of Vicinity:



7 km. N, 3 km. E Cartago, Prov. Cartago, Costa Rica.

6 July (con't) on the moderately sloped banks facing to the south and east. Most of the fresh activity is either in the short (< .3 m) grasses or low cane fields.

We stayed around this locality until about 1630. The fog was settling-in and the wind (which was blowing all day) was getting rather chilly. We drove back toward Cartago and set out 55 sherman traps (48 small, 7 large) along a creek side in hopes of catching *Heteromys*. The vegetation was mostly native... lots of bromeliads covering the trees. — dense vines everywhere. We drove into town, bought a few more supplies (+ beer) and drove back to the creek locality. We slept here for the night — Much disturbance from people parking nearby, horns honking etc. Cool, overcast night.

7 km. N, 3 km. E Cartago, Prov. Cartago, Costa Rica.

7 July. 0600 awoke and checked traps at the creek locality: 2 km. NE Cartago, Prov. Cartago, Costa Rica.

Captures: 2 *Scotinomys*
4 *Oryzomys*
6 *Peromyscus* (2 species)

Success: 12/55 (1 trap taken)

Journal

Hafner, M.S.
1978

7 km. N, 3 km. E Cartago, Prov. Cartago, Costa Rica

7 July (con't) We kept all of the live animals and drove to the Macrogeomys locality (above). We had 2 set-offs, but no other activity. We set one more set at a brand-new hole on the hillside with the growth of cane about 0.3 m tall.

0800 drove into Cartago for breakfast. Walked through the local market-place where we bought banannas, cucumbers and carrots. We also each bought an authentic piece of old pottery (pre-colombian) at an old shop. We hated not buying more, but we were restricted by space on the flight home. The pieces that John and I bought were picked-ups near here at the Volcán Irazú.

0900 returned to the above locality — no activity. We reworked the traps then waited. We noted numerous interesting plants and animals nearby. Very many epiphytes — small orchids — many in bloom (blossoms 20 mm dia.); many bromelids — large & small. Numerous "rhinocerous beetles" about 15 mm long. Also noted several Sceloperous-like iguanid lizards — typical S. occidentalis size but with a black throat collar and lime-green coloration dorsally. The tail was even lighter green than the back. John found a leopard frog (10 cm. sv).

Journal

Hafner, M.S.
1978

7 km. N, 3 km. E Cartago, Prov. Cartago, Costa Rica

7 July (con't) Since we didn't catch any *Heteromys* last night we decided to set the sherman traps near Tres Rios tonight (a small town between San Jose and Cartago). This is a known *Heteromys* locality.
1600 rechecked traps – no captures. Drove into Cartago where we bought a bulb for our flashlight, then we headed back toward Tres Rios. We found a fairly nice area to set traps along the highway about 1 km. SE of the turnoff to Tres Rios. The habitat here is mostly cultivated coffee and bananas with occasional outcroppings of native vegetation. We set in and around coffee trees. – 42 traps in total.
1800 Returned to Tres Rios, a small cluttered town, and had dinner. Later, we drove a ways out of town and slept-out for the night. Very comfortable night. Overcast. ±60°F.

Tres Rios, Prov. Cartago, Costa Rica

8 July 0600 awoke and checked traps. Only 1 capture.

1 *Peromyscus* (?)

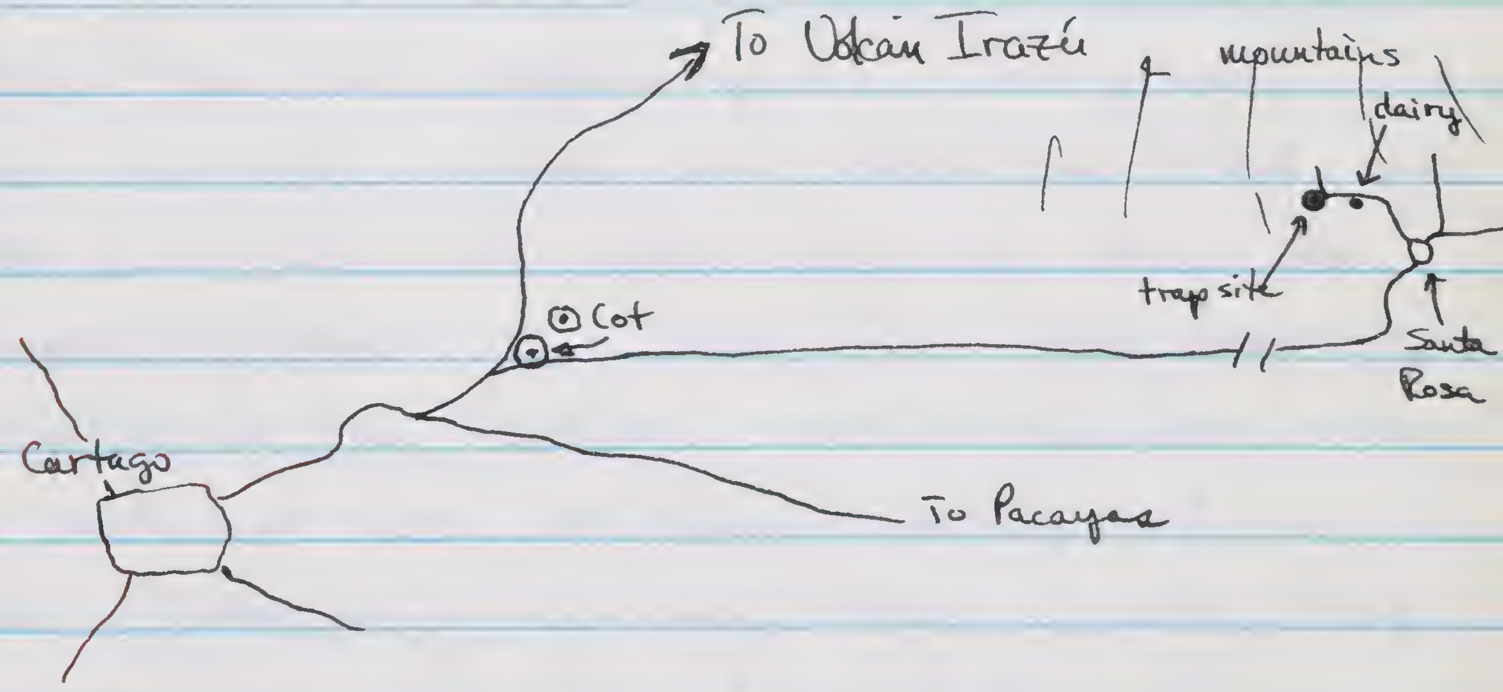
Success: 1/42

Journal

Hafner, M.S.
1978

Tres Rios, Prov. Cartago, Costa Rica.

8 July (con't) We released the single individual as we had captured several more last night. We drove back through Cartago to the gopher locality. No activity. I talked with a local campesino who told me that there were numerous "Taltuzas" near Santa Rosa (marked Santa Rita on at least one of our maps). We were very discouraged withe the lack of activity at this site, so we pulled traps and headed for Santa Rosa.



We took the turnoff to the town of Cot, then drove east out of town — a fairly nice, paved road. We continued on eastwardly for several miles — I'll get the exact mileage later — then drove through the small puebla of Santa Rosa and continued north for about 2 km. We stopped at a bend in the road about 500 m. past the

1 km. W Santa Rosa, Cartago Prov., Costa Rica.

8 July (con't) "lecheria" (dairy) and noted numerous signs of gopher activity in the surrounding fields. (This area is mainly used ~~of~~ for dairy cattle with occasional small plots for vegetables.) We set out 10 sets (pedal traps) then began our wait, as usual. At about 1000 a local guy (about 25 years old) came by holding 3 pedal traps (not ours). He told us that many people trap gophers in these parts and that his uncle was a 'professional' of sorts in that he was paid 20 colones ($2.50) per gopher to trap them in people's yards. The people then eat the gopher and drink its blood. We told him that we would pay 30 colones for several gophers — he said "fine" and went off to work in the lecheria. Not 10 minutes later he returned with a friend who had a live Macrogeomys hanging from a pedal trap. We took the animal and paid the fellows. They will return at 2:00 PM when they get off of work. (working hours in Costa Rica appear to be 6—2). The gopher was medium-large with fairly dense fur — It reminded us of Zygogeomys, and had ~~it~~ the same smoke-gray fur coloration. 1300 we rechecked our traps; SCH had a set-off, I had no

<u>Journal</u>

Hafner, M.S.
1978

<u>1 km. W Santa Rosa, Cartago Prov., Costa Rica.</u>

8 July (con't) activity. It had rained fairly steadily from about 1030 to 1300 —; it is now 1400, ~~ol~~ overcast but not raining. We are planning to drive into San Jose tonight to set traps at a locality nearby. We really want to get <u>Heteromys</u>, although our prospects appear slim. We'll return to this locality tomorrow to pick-up our traps plus any gophers the local trappers may have for us.

1430. Departed trap site and drove via Cartago to Tres Rios. We found a road that crossed the river to the south of the highway. We asked permission and then carried the 42 sherman traps about ½ mile past the river (south) and set half of them on a hillside with mixed evergreens, vines, even some yucca. The other half of the traps were set in <u>dense</u> jungle — very dark and thick. We drove into San Jose and ate dinner on the NW corner of town. Slept out just outside of town on the road to the airport. Comfortable night.

9 July <u>Vicinity of San Jose, Costa Rica.</u>

0600 awoke and drove to check traps.

Journal

Hafner, M.S.
1978

1 km. S Tres Rios, Cartago Prov., Costa Rica.

9 July Results: 2 *Peromyscus* sp.
2 *Scotinomys*
success: 5/42 —— 1 *Heteromys desmarestianus*

We were extremely pleased to have captured the *Heteromys*! It was taken in the dense tropical forest adjacent to a clearing where banana trees had been planted.

We drove on to the Santa Rosa locality. Upon checking traps, we found that we each had a catch.

2 *Macrogeomys heterodus*

A short time later, a local brought us another animal.

1 *Macrogeomys heterodus*.

We waited until about noon, then drove back toward San Jose. We reset the 42 traps in the same dense tropical forest that had yielded the *Heteromys* last night. We then drove into San Jose where we checked into the Hotel Presidente (¢17.50 us./night). We karyotyped that evening and then went out to eat. We'll prepare the skins tomorrow.

Journal

Hafner, M.S.
1978

San Jose, Costa Rica.

10 July Had a room call @ 5:15 AM. Drove to check the traps.

Results:

1 km. S Tres Rios, Cartago Prov., Costa Rica.

1 *Heteromys*

+ several small cricetids (released).

The *Heteromys* was an adult male (scrotal)! We returned to the Hotel in San Jose, where JCH karyotyped the *Heteromys* while I made reservations for our flight out. I also began the procedure for an export visa for the skins.

1130 we quickly checked-out of the Hotel, drove to the Agriculture Ministry, picked-up the export permit, then rushed to the airport. We just caught our LACSA flight — had trouble with customs (re. our pre-Colombian pots). They kept our larger pots; we managed to keep the smaller ones.

The LACSA flight stopped in Nicaragua, then on to Mexico City. We decided that the stay in Mexico would not yield any important specimens, so we continued home via Houston, Dallas → S.F.

Journal

Hafner, M.S.
1978

San Pablo, Contra Costa Co., California.

9 September John Hafner and I (including Barron, & Sparky) departed San Pablo 0600 and drove NE via Reno and Winnemucca to Elko, Nevada. We then continued east on Hwy 80 to a point approximately 5 miles west of Halleck. Here we set out 60 sherman traps in sandy areas adjacent to the highway. (about 1 mi. E of the north fork of the Humboldt river. There had been rain recently (and it was threatening now) so that the soil was somewhat caked. We placed our lines in and around the small hills to the north of the highway. 1600 we continued east on Hwy 80 to Wells, where we turned north on Hwy 93. We stopped at a point 13 mi. S. Contact amidst low, rolling hills covered mostly with *Atriplex*, *Chrysothamnus* and some scattered *Sarcobates*. We set out 240 traps in four lines, 3 on the east side of the highway and 1 on the west. The soil was powdery in some places, though caked in most. We slept in JCH's ~~out~~ van near the trap site. Cool evening, rain

Journal

Hafner, M.S.
1978

13 mi. S. Contact, Elko Co., Nevada.

10 September began about 4 AM. and continued on-and-off until about mid-morning. We woke-up about 7 AM and checked the traps in the rain and blowing wind.

Results: 1 Onychomys leucogaster (kept)

We were very pleased to have captured 2 Micro's at this locality. As usual, they in the very last traps checked.

0900 we drove back through Wells and headed west to the Halleck locality.

5 mi. W. Halleck, Elko Co., Nevada.

Results: 1 Onychomys leucogaster (kept)

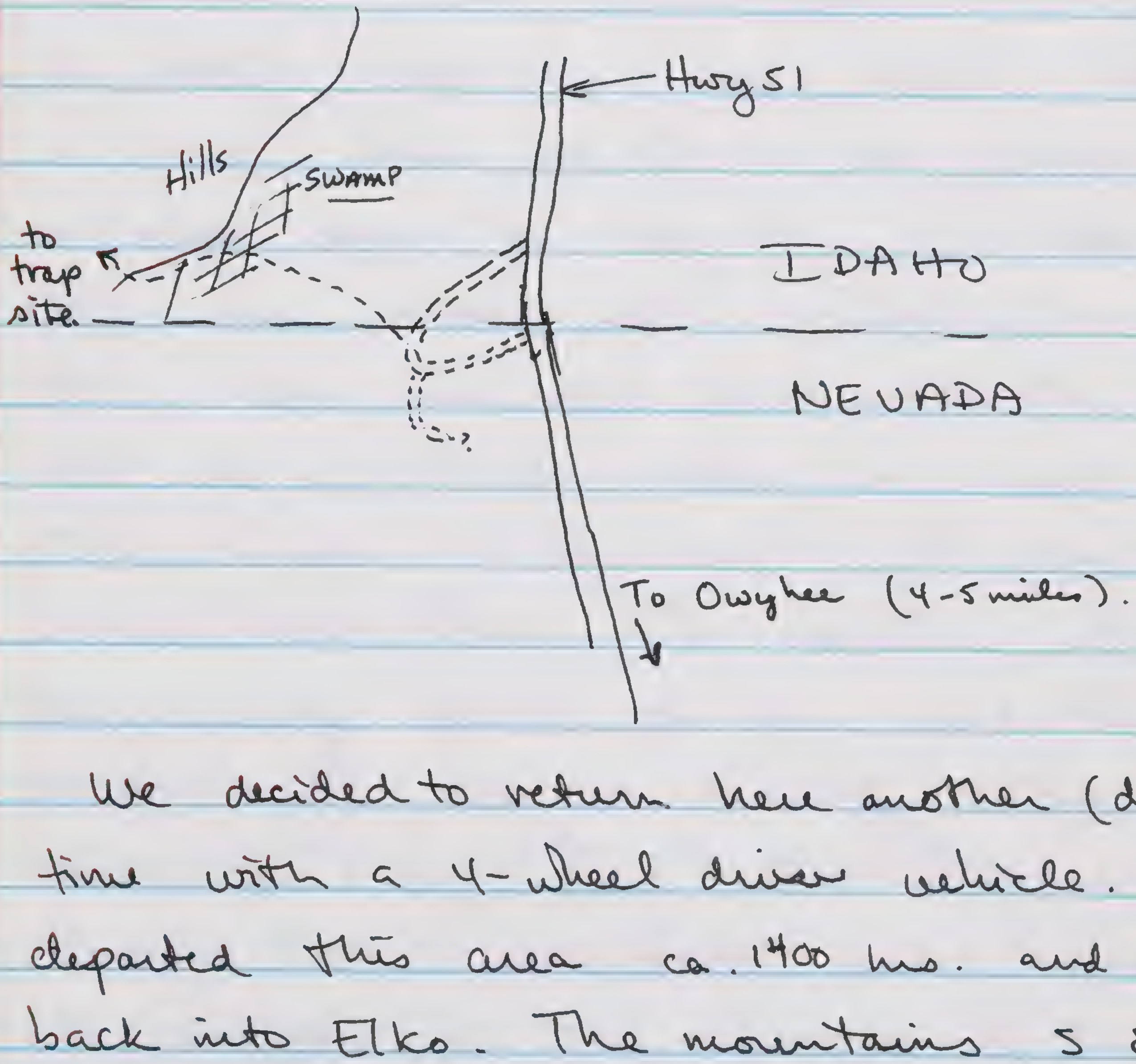
We continued west to Elko where we bought supplies then headed north on Hwy 51. We drove through intermittant rain to the Idaho border. The clouds were now only thunderheads — no longer cumulus.

Journal

Hafner, M.S.
1978

Vicinity Owyhee, Elko Co., Nevada.

10 September (con't) We headed west and north on a dirt-gravel road which was supposed to take us to a known Micro locality in SW Idaho. We only made it about 3-4 miles before the road became too muddy to negociate. We stopped amidst a heavy hail shower and ate lunch.



We decided to return here another (drier) time with a 4-wheel drive vehicle. We departed this area ca. 1400 hrs. and drove back into Elko. The mountains S of Owyhee in the Humboldt Nat. Forest are extremely beautiful. We set out 240 traps again at the locality 5 mi. west of Halleck. After dinner we drove into Elko and gambled awhile. 2200 retired.

Journal

Hafner, M.S.
1978

5 mi. W Halleck, Elko Co., Nevada.

September 0700 arose. Very cool night. Checked traps.
Results: *Onychomys leucogaster* (kept)

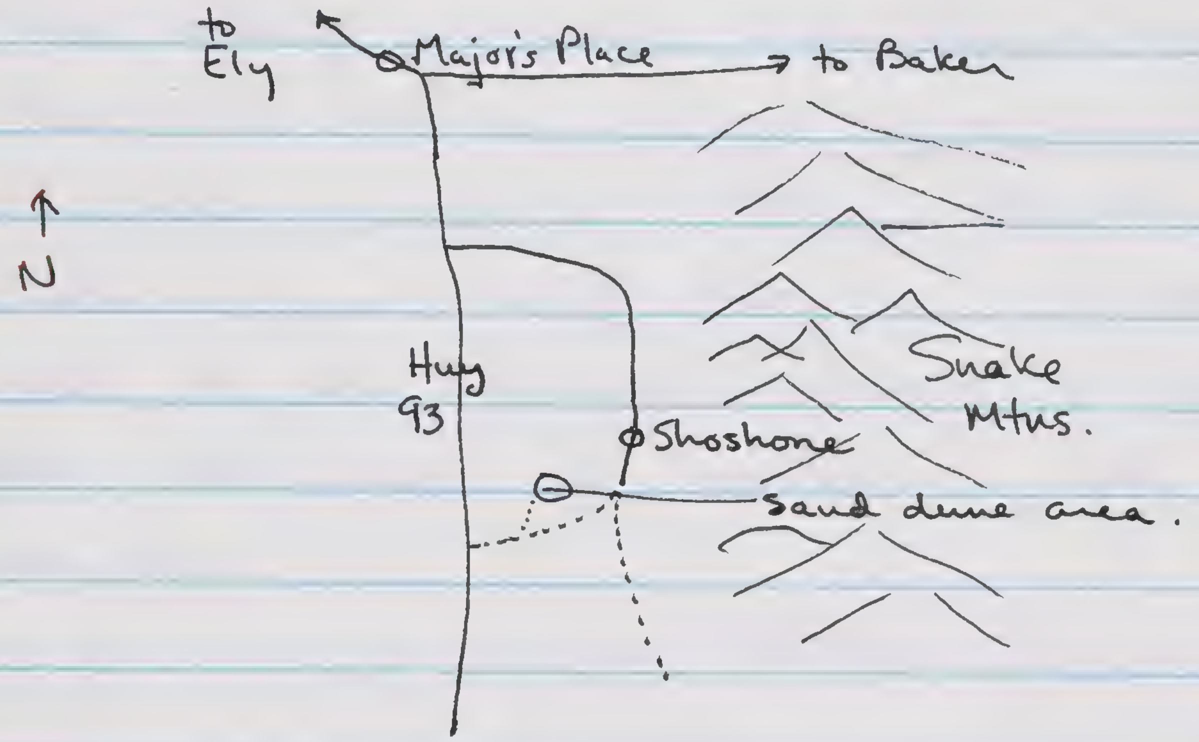
It appears that *Micros* are no longer in this area. (Hall caught them here years ago). We pulled traps, then drove east on Hwy 80 to Wells, where we ate a nice breakfast. We continued south on Hwy. 93. The ~~Red~~ Ruby Mtns. were covered with considerable snowfall, which made beautiful scenery to the west. 1300 arrived East Ely where we bought supplies, then headed SE on Hwy 93. through the Schell Creek Range. The weather was considerably better as we went further south. We took a turnoff a few miles south of "Major's Place" that headed East toward the Snake Range and Shoshone. We stopped in the remains of the town of Shoshone and looked around for interesting objects. We found pieces of old, small-scale ore cart track and small spikes. The area had a large accumulation of fine, wind-blown sand – it appeared that

Journal

Hafner, M.S.
1978

SW of Shoshone, White Pine Co., Nevada.

11 September (con't) disturbance of the area by man had resulted in the sand accumulation. We decided not to set traps here, but to search for more natural dunes.



We continued South for a mile or two until the road split into one road to the south and one west. We drove west toward some dunes we could see in the distance. We stopped ca. 1500 and carried 180 traps over to the dunes (about 1 mile away). When we arrived at the dunes, we noticed that a road entered from the SW — this would save us from carrying the traps back out. We set the traps in the fine, sandy areas. Comfortable, sunny afternoon. 1600 we departed the area and hit Hwy 93 back

Journal

Hafner, M. S.
1978

Vicinity of Baker, White Pine Co., Nevada.

11 September (con't) to Major's Place where we turned east on Hwy 50 (6). and drove to Baker. We refuelled in Baker then south through Garrison, Utah. We stopped just after dark in the valley containing the Desert Experimental Research Station (12 mi. N, 40 mi. W of Milford, Beaver Co., Utah.) We trapped about 1/2 mi. N of Hwy 21 on the road to the Research Station — We set out 180 traps by moonlight. Cool, clear evening.

12 mi. N, 40 mi. W Milford, Beaver Co., Utah.

12 September 0600 awoke and checked traps.

Results:

We were very pleased to have 2 Micro's from this important locality. We drove back through Baker to the first locality (Sand dunes) and checked traps.

Results:

Journal

Hafner, M.S.
1978

Vicinity SW of Shoshone, White Pine Co., Nevada.

12 September (con't)

We were quite surprised that we hadn't captured any *Microdipodops* here. We felt that they were surely here.

1000 we picked-up all traps and headed for home. Drove via Ely, Eureka, Fallon and Reno to arrive home ca. 2100 hours. Successful trip in spite of the generally poor weather.

Late September trip to S. Idaho. - SEE FIELD NOTES OF J.C. HAFNER.

Hafner, M. S.

Journal

1979

Mexico

Journal

Hafner, M.S.
1979

Monterrey, Nuevo Leon, México.

28 June 1330 depart San Francisco, CA and fly via Houston, TX to Monterrey, México. Arrive Monterrey 2130 local time. Rent "Dodge Dart" (VW bus was not available) and drive into Monterrey (about 15 km west of the airport). 2230 check into hotel (Hol-Rey) in downtown Monterrey. The hotel is a hole. ($16 for 2 beds). We have a couple beers nearby, then retire, 2400.

Monterrey, Nuevo Leon, México.

29 June 0645 arise and checkout (after a very hot evening). Eat breakfast the wait around for banks, stores, etc. to open. 0900 exchange money ($1 US = $22.65 pesos). then we bought necessary articles at a nearby "super-mercado" and headed for Union Carbide Mexicana, which we had passed going from the airport into town last evening. When we arrived at Union Carbide, we found that we were at the wrong plant. A very kind woman gave us directions (over the phone from the gate guard-house) to the Union Carbide Mexicana Division Linde plant (see map next page). We drove to the plant and had ~~not~~ no trouble getting the 10 liters of L N_2 needed to fill the LR10 cylinder. We then drove back to "centro" and reconfirmed our air reservations for the up-coming trip to

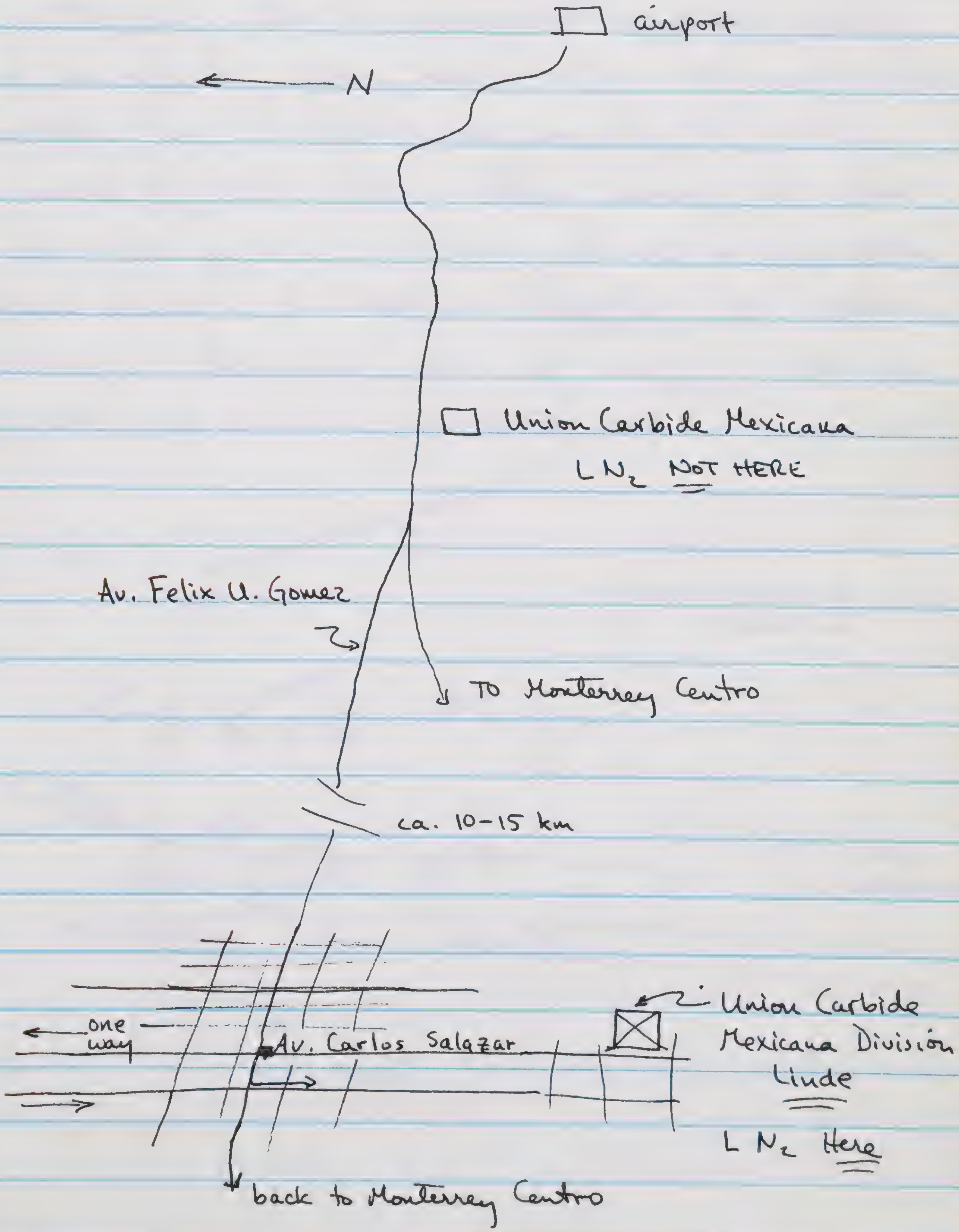
Journal

Hafner, M.S.
1979

Monterrey, Nuevo Leon, México

29 June
(con't)

Map to liquid N_2 supplier in Monterrey

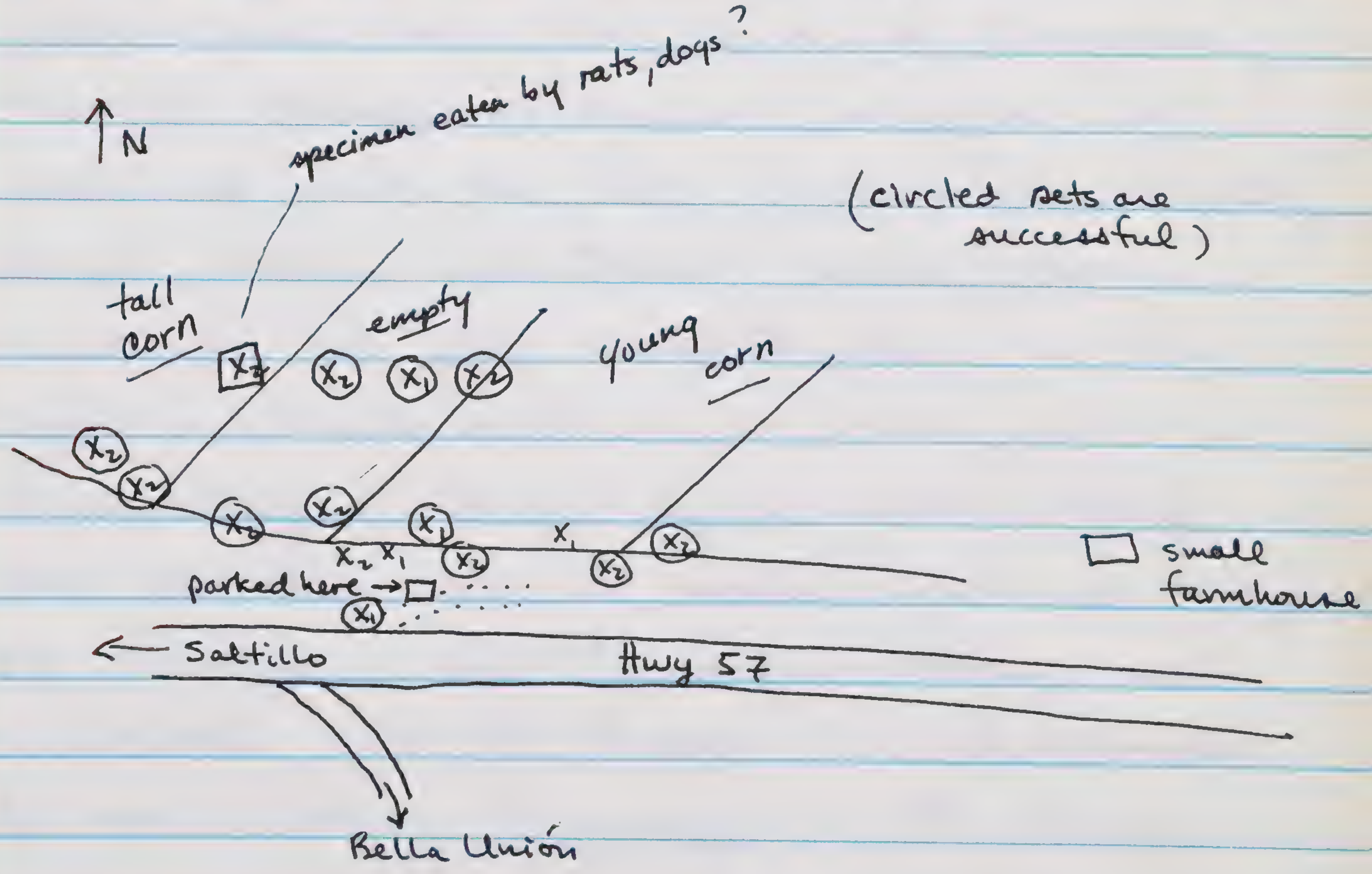


Journal

Hafner, M.S.
1979

Monterrey, Nuevo Leon, México.

29 June (con't) Mazatlán (Aeromexico). 1300 departed Monterrey and drove via Hwy 40 to Saltillo, Coahuila. The mountains along the way were quite spectacular - razorback ridges jutting quite high in the air. The vegetation consisted mainly of mesquite, yucca, and cholla. We outskirted Saltilla and headed ± east on Hwy 57 to the vicinity of Bella Unión. After looking (for about 2 hrs.) for gophers, we finally found a population dense enough to warrant trapping (we hoped for 15-20 specimens). We set out a total of 15 sets as per the following map.



Journal

Hafner, M.S.
1979

1 km N Bella Unión, Coahuila, México.

29 June (con't) By sunset (2000) we had 9 *Thomomys* (*bottae*), 2 of which were alive (for karyotyping). We drove into the se outskirts of Saltillo and ate a very nice dinner. Slept near the trapping locality – windy, warm night. Clear.

1 km N Bella Unión, Coahuila, México.

30 June 0630 arose and checked traps ... 2 more gophers. We processed these specimens and reworked our traps until about 0930. We caught 6 specimens today, 1 of which was alive. Having a total of 15 specimens, we pulled our traps and drove to the nearby town of Arteaga where we searched for boxes to hold the live gophers. We finally found boxes, but these proved to be a headache for the next ±3 days as the gophers would escape each evening in the car necessitating a search of the entire vehicle each morning. 1100 we headed south on Hwy 57 through a few beautiful valleys and, eventually, into the desert. We noted numbers of prairie dogs (*Cynomys*) in the desert regions. We turned east on Hwy 60 and climbed slowly into the Sierra Madre Oriental. We then turned south on

Journal

Hafner, M.S.
1979

Vicinity of La Ascensión, Nuevo Leon, México

30 June (con't) Hwy 68, drove a few km and stopped in a small grove of pines. Here we prepared 12 specimens. 1730 continued south on Hwy 68 through thinly forested areas mixed with Yucca and 1830 arrived at Tia Juana ("San Juanito" on our AAA map). Here we finally found water to drink — we had been without thus far this trip! 1900 arrived La Ascensión, It was becoming dark so we ate dinner in La Ascensión and drove just east of town to camp for the night. Cool, humid night. Our bags were

1 July wet in the morning. 0700 drove back through La Ascensión and into the agricultural areas west of town. Noted gopher diggings and we set out a few sets. After looking the area over, we decided the gophers weren't thick enough in this area so we drove SE of town on Hwy 68 through the next large valley to the SE. As we entered the valley, we noted occasional signs of gophers, but the bulk of the valley appeared to have no gophers. We turned around and headed back to La Ascensión. We set traps in and around a corn field about 1 km W. of town. Again, however, the gophers weren't dense enough

Journal

Hafner, M.S.
1979

Vicinity La Ascensión, Nuevo Leon, México.

1 July ~~30 June~~ (con't) to warrant our staying, so ±1000 we pulled traps and headed north on Hwy 68. We stopped at a point several kilometers north of La Ascensión in a mixed pine-*Yucca* forest and set out a total of 25 sets in a region of intense gopher activity. 1200 we captured 4 *Pappogeomys*, so we pulled traps and headed north (we are only interested in *Thomomys*). It then occurred to us that the gopher holes in this entire valley were very large, indicative of *Pappo's*. We had, for some reason, thought that Pappo's didn't range into these mountains.

Locality:

4 *Pappogeomys castanops*

We drove north to Galeana and searched in vain for signs of *Thomomys* — all we could find were obvious *Pappogeomys* signs. There were no higher valleys that we could reach in this vehicle — and, in fact, probably few higher valleys existed since the mountains were almost naked rock outcroppings that jutted-up several

Journal

Hafner, M.S.
1979

1 July ~~30 June~~ (con't) Vicinity La Ascensión and Galeana, Nuevo León, Mx.

Thousand feet above the rather low, hot valleys. 1600 quite disappointed, we decided to depart the area and return north to bolster our sample at Bella Unión. 1830 arrived at the Bella Unión locality and reset 16 sets in the fields both north and south of the Hwy. We captured 2 more Thomomys before dark (1 alive). 2000 left traps in the ground and drove into Saltillo — I was feeling quite poor (upset stomach), so we thought something to eat would help... It didn't. 2200 checked into Motel La Fuerte east of Saltillo ($440 pesos)... Showered and retired.

2 July 1 km N Bella Unión, Coahuila, México.

0630 JCH arose and drove to check traps. I was still feeling ill, so I stayed behind. 0845 JCH returned with 2 more gophers making a grand total of 19 specimens from this locality. We spent the morning karyotyping. 1300 checked-out and drove a few km to the town square in Arteaga where we stuffed the gophers (using a park bench as a table). 1430 departed Arteaga, had a ~~ct~~ cool drink in Saltillo, then drove back to Monterrey via Hwy 40.

Journal

Hafner, M.S.
1979

Vicinity Monterrey, Nuevo Leon, México.

2 July (con't) 1700 arrived at Monterrey airport. Checked into flights to Mazatlán and found ourselves on the waiting list for a flight at 1830! We quickly packed our gear, turned-in the vehicle, and exchanged our tickets. 1900 we boarded the Mexicana flight 731 to Mazatlán. We carried-on the LR-10 Liquid N_2 container with no difficulties. It was in a white flour-sack, tied at the top and I slung my light jacket over it. We put the container between our seats and covered it with the jacket. There was no metal detector at the airport - which might have led to difficulties. 2030 arrived in hot, smelly Mazatlán. The only vehicle we could rent was a jeep with a canvas cover, so we took it to give it a try. After considerable difficulty, we checked into the Motel California in Mazatlán ($240 pesos). We later went to the playa and ate dinner. 2300 retired.

Vicinity Mazatlán, Sinaloa, México.

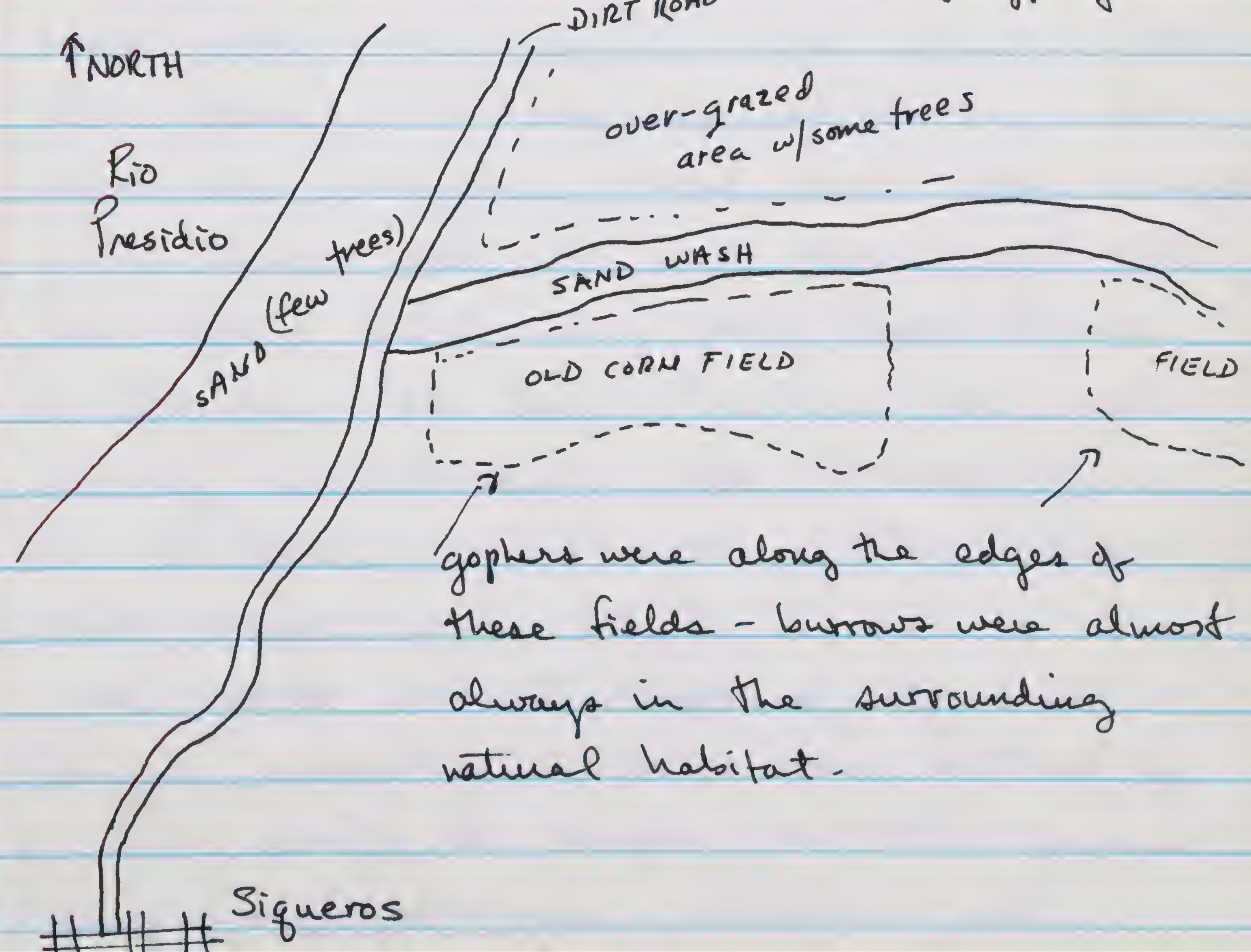
3 July 0730 arose, showered and ate breakfast. 0900 went to the Mexicana airline office to change our reservations from July 11 to this friday, July 6. Bought some supplies (no

Journal

Hafner, M.S.
1979

Vicinity Mazatlán, Sinaloa, México

3 July (con't) water) and headed south on the main highway. Turned north at Villa Unión and ca. 1200 arrived at Siqueros. We then drove to a point 1 km N Siqueros. We had trapped *Thomomys* at this locality in late July, 1977. I still was feeling rather ill, so John set out 6 sets. The heat was extremely oppressive. John worked the sets most of the PM and caught a total of 3 gophers. He and I set out a total of approximately 13 sets — gophers were very hard to find. Just before sunset, John pulled-in a live male! Much needed for karyotyping.



Journal

Hafner, M.S.
1979

1 km. N Siqueros, 50 m, Sinaloa, México.

3 July (con't) The native habitat was "short-tree semi-tropical forest" with large legume trees and large candleabra-type cacti. The soil was extremely rocky. The Thomomys seemed to avoid the softer soils and were always found in rocky areas. 1930 we drove into Siqueros for some "refrescos" (cokes) and retired 2045. We had a miserable night... mesquitos, hot, dogs barking, light rain...etc.

1 km N Siqueros, 50 m, Sinaloa, México

4 July 0530 awoke after little sleep. Checked traps - no captures. We each set out several more sets bringing a total of ± 20 sets. I captured 1 Thomomys at 0930, 1 at about noon, and one about 1600. John caught 1 at about 0830. We had several set-offs, but didn't catch any more than these 4 Thomomys all day. Extreme heat made it very uncomfortable. We washed-off in the Rio Presidio on occasion - the water must have been 85°F.

We noted several types of iguanid lizards, ranging in size from that of a fence swift to large (ca. 18") iguanas. Many Cnemidophorous, snakes, etc.

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1 km N Siqueros, 50 m., Sinaloa, México.

4 July (con't) I saw several large jack-rabbits (*Lepus*) and 2 roadrunners (*Geococcyx* sp?). We worked the traps all day and decided we should karyotype the live gopher John caught yesterday, so we drove into Mazatlán and checked into the Motel California. 2300 finished karyotyping and preparing animals. Ate dinner on the main-drag (Playa) and 2430 retired. Nice evening.

1 km N Siqueros, 50 m., Sinaloa, México.

5 July 0615 arose and drove back to the trapsite. We had left the traps overnight - caught 2 *Thomomys*... John's was damaged by ants. We worked the traps all morning and captured 2 more gophers, 1 live. 1200 pulled traps. The heat was extreme. I doubt that we could work much longer today. We had 12 specimens from this locality and we couldn't find ~~and~~ any more active systems. We headed back into Mazatlán to karyotype the live gopher. 1400 checked into Hotel Mazatlán and the north Playa. Slept from 1430 to 1630. 1700 ate dinner. Later, we karyotyped and prepared specimens.

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Mazatlán, Sinaloa, México.

6 July 0730 departed motel for airport. Checked-in vehicle. 0935 departed Mazatlán Airport bound for San Francisco, California. A fairly successful, though extremely uncomfortable trip.